


4,531/5

John Milnes

20 C 10194



Digitized by the Internet Archive
in 2017 with funding from
Wellcome Library

<https://archive.org/details/b29336752>

A
MEDICAL GUIDE

TO THE
CHELTENHAM WATERS,

CONTAINING

Observations on their Nature and Properties;

THE DISEASES

IN WHICH THEY ARE BENEFICIAL OR HURTFUL;

WITH THE

RULES TO BE OBSERVED

DURING THEIR USE.

BY

WILLIAM GIBNEY, M. D.

*Graduate of the University of Edinburgh; Member of the
Royal Medical Society of Edinburgh; one of the
Physicians to the Cheltenham Dispensary, &c.*

“Neque Medici officium tam arcto limite cohiberi ipsa Natura docet: suggerit enim prodiga, innumera remedia, quæ maximis viribus in corpore humano pollent, et varias et saluberrimas mutationes in eo efficere valent.”

Gregory's *Conspectus Medicinæ Theoreticæ*.

PUBLISHED BY S. BETTISON,

Cheltenham Library,

Sold also by Messrs. Baldwin and Co. Paternoster Row, London,
And Hodges and M'Arthur, Dublin.



CHELTENHAM :
Printed by Turner and Hadley.

TO
SIR MATTHEW JOHN TIERNEY, Bt.

M. D.

PHYSICIAN IN ORDINARY

TO

The King,

&c. &c. &c.

THIS SMALL VOLUME

IS INSCRIBED,

As a Testimony of Esteem and Respect

FOR HIS

DISTINGUISHED TALENTS AND CHARACTER,

BY

THE AUTHOR.

“ On doit conclure de là que nos minéraux fortifient l'estomac—parcequ'en évacuant et desemplissant l'estomac, soit par les urines, soit par les selles, soit par la transpiration, ils donnent encore de l'appétit, et procurent en même temps des fortes oscillations.”

LE BRUN.

PREFACE.

SO much has been lately published upon the Cheltenham waters, that the appearance of another volume may excite astonishment, and demand some explanation. The greater number of these publications were written in a spirit of controversy, arising from some insinuations in regard to the purity of the springs. It has been the object of the author of the present work, most strictly to avoid such discussions, as the mind of the public is now perfectly at rest upon that point. To inquire into the causes, which gave rise to such erroneous and unjust notions, not to say to calumnies,

has not been even touched upon, as it was not intended even indirectly to revive a subject, which has now almost met its merited oblivion. Indeed it required something more than mere conjecture or vague assertions to tarnish the justly earned celebrity of these mineral springs; more particularly as they are at all times open for the public inspection, when any adulterations or impositions could be so easily detected.

The present volume was not undertaken with a desire of its superseding those works now in the hands of the public; but on perusing them, they were conjectured to be much too extensive, and not adapted for books of reference. A patient, on visiting a watering place, will not derive much benefit, and still less pleasure, from intricate chemical reports, or from lengthened histories of

diseases. To the greater number of invalids, such statements are not only tiresome but frequently unintelligible. A short and succinct account of the impaired states of the system, which require the aid of the springs, was deemed to be of much greater utility to those, who frequent Cheltenham for their health, than a narration of circumstances foreign to the object of their visit.

It was under such an impression, the author commenced the following work, in which he has been guided more by a desire of being practically useful, than of introducing new doctrines or hypothetical opinions. What has been here advanced, is in a greater part the result of his own experience, and of the communication of several friends, who have from time to time been in the habit of drinking the waters. In the history of the

complaints, which require their use, he has been as short as the subject would well admit of, and has, as far as possible, pointed out to the patient the necessary plan he is to pursue in the simpler forms of disease. An outline of symptoms, which are benefited by a course of the waters, has been merely given, as a more lengthened detail would have but confused the judgment, and probably led into error as to the application of the remedy.

Much inconvenience has frequently arisen to the patient by drinking these aperient springs unadvisedly ; without a due observance of rule as to diet, exercise, and the other collateral means to be attended to, during their administration. It has been the object of the author to obviate this inconvenience, by briefly pointing out the proper plan to be pur-

sued throughout a course, both as far as regards the waters themselves, and those medicines, which assist their operation. By adhering strictly to these rules, the patient may in the greater number of cases proceed with confidence. From errors as to this most essential point, so many of the supposed failures of the Cheltenham waters are to be attributed; for it has been too much the habit, not only to commence the use of the remedy without feeling convinced of its propriety, but also to persist in the usual mode of living during its exhibition. An endeavour to counteract these indiscretions by a few salutary admonitions has been attempted. It was indeed under this very important head the greatest information was required, and it is presumed the following observations may here materially assist the invalid.

To comprise every thing appertaining to the waters in this little volume, would have far exceeded its prescribed limits, it being merely meant as a book of reference, as an admonitory medical assistant to the patient, nothing being discussed, which is not of practical importance. A portable work of the kind has been for a long time a desideratum, and it is to be hoped the present essay may answer this intention.

The most modern analysis is simply inserted, and chemical disquisition avoided, as being quite foreign to the limited plan of the work, which cannot be considered as an enlarged essay, but as an outline embracing necessary facts in the most condensed form.

An endeavour has been made to avoid

professional technicality, and to use language as intelligible as the nature of the subject would well permit. The author has not, in fact, aimed so much at literary elegance, as at practical utility.

ERRATA.

Page 16, l. 20, dele the comma after "months," and insert it after "even."

— 71, l. 11, for "induce," read "induces."

— 71, l. 82, for "are," read "is."

CONTENTS.

	Page
<i>Introduction</i> ,.....	1
Cheltenham, its situation, neighbourhood, &c. 1.—Climate of Cheltenham, 3.—winds, &c. 4.	

PART I.

<i>General Character of Mineral Waters</i>	5
Nature of Cheltenham waters derived from the peculiarities of the soil in the neighbourhood, 7.—Classification of the waters into six numbers too extensive, 8.—A more natural division, 8.—Salts contained in Cheltenham waters, 11.—Their minute division, 12.—Inutility of drinking the waters, or imitations of them, at a distance from Cheltenham, 13.—Salts to which the Cheltenham waters owe their efficacy, 15.	

PART II.

<i>General effects of Cheltenham Waters</i>	18
The immediate effects, 19.—Sometimes occasion griping, 20.—Effects upon the kidneys, 21.—Upon the skin, 22.—Upon the rectum, 23.—In bringing forward some diseases, 24.—Upon the gouty, 25.—Upon females, 26.—Ill effects sometimes arise, 27.	

PART III.

Page

Diseases in which Cheltenham Waters are useful..... 28

Indigestion, 30.—Its symptoms, 31.—Appearances of the tongue, 32.—Of the evacuations and urine, 34.—Pains of the chest, 36.—Indigestion in those advanced in life, 37.—*Stricture in the rectum*, 38.—*Hypochondriasis or low spirits*, 40.—Herpetic eruptions. 43.—Aphthæ in the mouth and fauces, &c. 45.—Indigestion in females, 47.—In children, 48.—Application of the waters in indigestion, 50.—Use of mercury, 52.

Hepatic or Bilious Diseases, 55.—Importance of the liver, 55.—*Acute and chronic hepatitis*, 57.—Resemblance to duodenal diseases, 58.—Hydropic symptoms, 59.—symptoms according to the side of the liver diseased, 60.—Cheltenham waters in hepatitis, 60.—The nitro-muriatic bath, 61.—Preparation in those returned from India, 62.—*Anomalous hepatic symptoms*, 64.—Remarks on the bile, its deficiency, redundancy, vitiation, &c. 66.—Waters in dysentery, or sequelæ of Indian fevers, 69.—*Gall stones*, 70.—*Jaundice*, 73.—Cheltenham waters in these diseases, 75.

Inflammatory Disorders, 76.—Use of the waters in chronic inflammation, 77.—*Rheumatism*, 78.—Seat of rheumatism, 79.—Sympathies of distant parts in rheumatism, 80.—Partial perspirations in rheumatism, 83.—Cheltenham waters in rheumatism, 84.—*Ophthalmia*, 85.—*Gout*, 86.—Cheltenham waters in gout, 88.—Season for the gouty to visit Cheltenham, 89.—Buxton baths in gout, 90.—*Cutaneous Affections*, 91.—Sometimes in-

creased on first using the waters, 92.—Eruptions in young people, 94.—Eruptions resembling syphilis, 95.—Eruptions in females, 97.—*Gutta Rosea* or enlarged nose, 97.—*Erisipelas*, 99.

Female Complaints, 101.—Delicate structure of females, 102.—Very prone to constipation, 102.—*Hysterics Chlorosis*, 103.—Cheltenham waters in female complaints, and their superiority to those of Tunbridge, 104.—*Amenorrhœa*, 105.—*Leucorrhœa* and sterility, 106.—*Scrofula*, 107.—Indigestion and liver complaints in females, 108.

Nephritic Diseases, 108.—Closely allied to indigestion, 109.—Diseased appearances of the urine, 109.—The *Gravel*, 110.—Cheltenham waters in these cases, 111.—*Stone*, 112.

PART IV.

Diseases where Cheltenham Waters are contra-indicated 113

In acute diseases and great irritability of the stomach, 114.—In epidemic cutaneous affections, 115.—In diseases affecting the head, 115.—in some nervous affections, 116.—In diseases attended with effusion, 117.—In hemorrhagies, 117.—Consumption, and spasmodic affections, 118.—In strictures of the urethra, 119.—In scirrhus of the orifices of the stomach, 119.—In all doubtful cases, 120.

PART V.

Rules to be observed during a course of the Cheltenham Waters 120

- Season for Drinking*, 121.—Spring the most proper, 122.—
More especially for the gouty, 123.—*Time of the day to drink the waters*, 124.—*A dose of the waters*, 125.—To divide the dose, 126.—Necessity of using exercise between each dose, 127.—Not to use the waters too soon after a journey, 128.—Addition of the “solution” or “concentrated water” to each dose, disapproved of, 129.—*Temperature to drink the waters*, 129.—*Diet during a course*, 130.—Abstemiousness recommended, 131.—Wine in some cases necessary, 132.—Digestibility of meat and vegetables, 133.—Rules in respect to meals, 133, 134.—*Medicines and means in aid of the waters*, 135.—Purgatives, 136.—Mercury, 137.—Never to induce salivation, 138.—Observations on hot baths, 138.—Sulphur and other baths, 140.—Exercise, 143.—Remarks on the chalybeate wells in aid of the aperient waters, 143.—Wrong to change the different kinds of water, 148.—*Duration of the course*, 148.—Impropriety in drinking the waters without a cause, 151.
- Appendix*—containing the latest analysis of the waters, 155.

INTRODUCTION.

Cheltenham, its Situation, Neighbourhood, Climate, &c.

THE town of Cheltenham is situated almost in the centre of the county of Gloucester, in the beautiful vale of Evesham. It lies upon the little river Chelt, a tributary branch of the Severn, and is distant about 94 miles W.N.W. of London. Until of late years it was but an inconsiderable village. The celebrity of its mineral springs, their great efficacy in the cure of some diseases, and the beauty of its situation, have now rendered it a place of some consequence, and a great resort not only of invalids, but of fa-

shionables. The visitors, for the sake of pleasure and amusement, are now as numerous as those, who frequent the place for their health. The natural capabilities of the town are such, as to have tempted many to make it their permanent residence.

Cheltenham at present can boast of a population of at least twelve thousand souls, independent of the fluctuation caused by the constant arrival and departure of visitors. Such indeed are the inducements, which the town and its amusements hold forth, that the population has more than doubled itself during the last fifteen years.

The rides and walks in the immediate neighbourhood are extremely beautiful, and at all times afford the invalid an opportunity of taking exercise, where his mind will be gratified by the beauty of the surrounding scenery, and his health invigorated by the bracing and stimulating property of the atmosphere. To the visitor for pleasure, the country around will afford

ample amusement. The views from Cleeve down, Leckhampton Hill, and the Glenfall, will give infinite pleasure to the admirers of the picturesque. To the lovers of antiquity, the Roman pavement near Birdlip, and Sudeley Castle near Winchcomb, are objects of great curiosity. To those who wish to extend their rides, Gloucester, its cathedral, antiquities, manufactories; Tewkesbury, its old abbey; Berkeley Castle, &c. amply repay the visitor. There are many other objects of curiosity in the neighbourhood, for an account of which I beg to refer the reader to the Cheltenham Guide.

The climate of Cheltenham is particularly well adapted for the invalid, there being neither great extremes of heat or cold. The annual mean of the thermometer for the years 1819 and 1820, were $52^{\circ} 5'$ for the former, and $51^{\circ} 7'$ for the latter, a temperature sufficiently indicative of the mildness of the atmosphere. The town is so sheltered by hills from the north and east winds, that consumptions and winter coughs are less prevalent here than at other places.

The hills too are at such a distance, as not to affect the salubrity of the air in the vicinity of the town by their attraction of moisture, &c.

The winds that generally blow at Cheltenham are from the south and west, which are esteemed the least prejudicial to health. These winds prevail nearly two-thirds of the year: in fact there is no part of England more salubrious than this spot, unless we may except the more southern parts of Devonshire. The well-known longevity of its inhabitants is a sufficient proof of this. Cheltenham has, however, this advantage over Devonshire, that we have here a natural remedy for a class of diseases, to which the inhabitants of this country are peculiarly subject.

As an additional recommendation to the invalid, (and indeed to others) I may observe, that independent of the mineral springs, there is no town which affords greater convenience for cold or warm bathing. The baths are fitted up in a style peculiarly elegant and

commodious, not exceeded in any part of the kingdom. The patient may be supplied with every species of medicated, vapour, shower, dry, douche, and other baths, at a moderate price. When we consider how very conducive bathing is to the animal frame, too much credit cannot be given to the proprietors of these baths, for the handsome manner in which they have anticipated the wants of the public. I may notice *en passant*, that the market of Cheltenham is at all times abundantly supplied with the best provisions.

PART I.

Character of Mineral Waters.

WATER in passing through the various strata of the earth, acquires impregnations according to the substances, with which it may come in

contact, part of which it may either dissolve, or hold suspended. These impregnations constitute what are commonly denominated the foreign contents of natural waters, which are solid, fluid, or gaseous; and according to the quantity, quality, and chemical combination of these substances, mineral waters are classified, and derive their specific character, and their use as remedies in the cure of disease.

All natural waters, if we except that which is precipitated in the form of rain, contain mineral matter in a greater or lesser degree, yet the term mineral is generally applied to those, which derive taste, odour, or other particular properties from their chemical contents, which are extremely numerous and diversified.

Those most frequently found are Sulphates, Murates, and Carbonates of Soda, Magnesia, and Lime, with their ferrugineous compounds—the gaseous varieties are less numerous, as carbonic acid gas, sulphuretted hydrogen, atmospheric air and very rarely nitrogen.

The relative quantities of these ingredients are variously intermixed in the different classes of mineral springs, and according to the predominant chemical contents, waters are termed, acidulous, sulphureous, saline, chalybeate, or calcarious. Thus is formed the most simple division of mineral waters, which necessarily excludes those of Cheltenham, as being both saline and chalybeate; hence they have with propriety been designated *Saline Chalybeate*.

Generally speaking, the substratum of the soil in the immediate vicinity of Cheltenham, more particularly to the south of the river Chelt, is composed of deep beds of a marly tenacious blue clay. The upper surface is soft, it gradually becomes more compact, according to its depth, and at length approaches to the solidity of slate, and contains a great variety of marine productions, fossil shells, and pyrites.

In proportion to the depth at which the waters issue, the chemical impregnations generally become more considerable: hence arises a dif-

ference in their strength, and each water is specified by numbers from one to six, thus forming a distinction, intended to render their administration in various conditions of disease more appropriate—but like many other arrangements which are meant to simplify, the above classification is attended with consequences the very reverse. It is more than probable, that a more satisfactory result would arise from a division under three heads in place of six, as the variation in one or two instances may be considered as not amounting to more than a shade of difference.

Thus under three heads would stand, the weak earthy Saline, No. 1; the pure Aperient Saline No. 2; and the Sulphuretted Chalybeated Saline, No. 3; agreeably to their division in the natural state. Not however but from distinct beds in some particular soils in the neighbourhood of Cheltenham, waters arise, which derive an impregnation of iron from the stratum near the surface; but as *in a general sense* this is not the case, the fact is not of sufficient magnitude, to make against the utility of the above

more simple division; and this the more particularly as the earthy or upper surface is of very little efficacy. Perhaps in a medical point of view every object would be obtained, by a division of the waters under two heads, the one comprehending the pure aperient saline, in which no iron exists; the other the chalybeated saline, with its proportion of that metal. This would be a still more simple division, and of every practical utility, yet it would exclude that water collected from the upper surface of the earth, which, although exceedingly inert, and never used medically, does however contain some saline ingredients, which do not allow us altogether to omit it.

The division of the waters under three kinds or heads, is the more necessary, as the quality of the water under each number at the separate springs differs materially—Thus, No. 1, at the Montpelier Spa is the Chalybeate Saline, while the like kind of water at the Old Well is No. 3; and at the latter well, No. 1 is called the Original Spa, which cannot be justly so considered, as

the spring is now supplied from a source twenty-four feet deeper than that of the Original Well, an improvement of great consequence, and only perfected during the last year. Were indeed the degrees of difference designated by numbers, they might increase indefinitely, as the impregnation and the strength is generally in proportion to the depth, holding in view that after heavy rain, their strength of consequence becomes diminished, at least with reference to their purgative and chalybeate qualities, the earthy ingredients being proportionally increased.

At the Sherborne Well, the waters are distributed under three heads, an example which the proprietors of the other establishments would do well in following, as every medical purpose may be thus answered. From this consideration, as conformable to what may be esteemed the best division, the reference to invalids will be hereafter given, to avoid confusion in their administration.

With respect to the particular ingredients, to which the Cheltenham waters owe their efficacy, we must limit them to the salts of soda, magnesia, and iron, together with the gaseous contents, which add somewhat to their efficacy, and render them lighter and more grateful to the stomach.

The Rev. G. Cooke, an ingenious chemist, asserts that Sulphate of Potash exists in these waters. To him alone is due the priority of this discovery, yet as it has not been confirmed by Dr. Scudamore in his last analysis, and as in a practical point of view, the existence of Sulphate of Potash makes no difference in the application of these waters, I merely mention Mr. Cooke's opinion, without entering into any controversy upon its validity. I may however observe that, from the result of Mr. Cooke's experiments, the late Mr. Thompson coincided in this opinion.

The relative proportion of these salts to the containing menstruum is so small, as to excite

our wonder at their effects upon the human body, more particularly as when taken separately, they exert but little or no action, but when used collectively even in small quantities, they act not only with greater efficacy but with more salutary influence: a circumstance not only applicable to the waters of Cheltenham, but to many other remedies used in the healing art.

This minute divisibility of their contents, and their greater diffusibility when thus naturally combined, render their effects upon the tender coats of the stomach and intestines, less irritating and more salutary, than can be attained by any chemical combination however accurately prepared. Indeed this must be considered with all the modern improvements in chemistry, as an object not to be obtained; hence arises the difficulty, indeed the absurdity, of using factitious preparations in place of the pure product from the “fountain head;” or of dissolving what are denominated “Cheltenham Salts” in water; or even in the use of

the genuine waters from bottles at any distance from the source of these salutary springs.

As a portion of the pure iron they contain is held in a great measure in solution through the agency of carbonic acid gas, to which no small part of their efficacy is to be attributed, and as this gas is of so subtile a nature as to escape in even well corked bottles, suffering the iron to be precipitated, it can very easily be conceived, that the salts procured in the usual manner, must be considered as only a product from a new combination, which, when re-dissolved in water, forms a fluid devoid of the greater part of the salutary combinations, for which the genuine water is so celebrated. This is more particularly applicable to that union of iron, in solution with sulphuretted hydrogen, a process not to be imitated by artificial means, and which should be considered as marking so strong a line of distinction, that a comparison between the water as it flows from its source, and as it is artificially imitated, can hold no place in general estimation.

From these considerations, the necessity of drinking the water at the spring cannot be too forcibly impressed upon those whose complaints require their use; which necessity is still more strengthened by innumerable instances, where no benefit was derived from a solution of the salts, or even from the water in sealed bottles, at a distance from Cheltenham. In these very instances, a perfect restoration to health has ensued from the regular administration of the remedy at the wells, under the usual regulation as to its particular kind and quantity.

Together with these advantages, we must take into the calculation, that of change of air, of scene, of early rising, of exhilarating society, of regularity in living, and in exercise, and of that succession of cheerful intercourse, which are daily experienced in those places, tending to dispel care, and render life more happy and agreeable. These are of considerable consequence, in alleviating the generality of diseases, to which the waters of Cheltenham are appropriate; as depression of mind, and what in the

phraseology of the day are termed nervous feelings, are generally the consequence of the most distressing bilious affections.

The purgative effect of these waters, as before mentioned, are due to the Sulphates of Magnesia and of Soda, and to the Muriate of Soda. The latter predominates in the spring, No. 4, at Mr. Thompson's wells, and in several of the other wells, according to the most accurate analyses, yet the several salts when naturally dissolved in the water, may exist in far different proportions from those generally supposed. Strictly speaking, by the rules of chemical affinity, the identity of Muriate of Soda and of Sulphate of Magnesia, cannot exist in solution without new combinations taking place. A mutual decomposition ensues, Sulphate of Soda, and Muriate of Magnesia being formed, the solution being then mildly aperient. There may, however, exist a doubt as to the above observation, but the efficacy of the water remains uncontested as a gentle purgative, which quality is increased by the Muriate of Soda, at the

same time that it softens the bitter taste, naturally existing in the Sulphate of Magnesia.

Muriate of Soda, or common salt in solution, is purgative, and in some instances violently so, but more particularly in sea water, where it abounds in considerable proportion. In combination, as found in Cheltenham water, it is mild in its effects, and by no means irritating to the tender coats of the stomach or intestines. We may hence look upon it as a most useful ingredient.

Iron, which is also present in its perfect solution by the agency of carbonic acid gas, holding its connection with the important compounds already mentioned, is of primary consequence in adding to the salutary effects of these waters. To this almost peculiar chemical combination, may be imputed the total exemption from debility, which patients experience during a course of Cheltenham waters for months, even these debilitating effects constantly ensuing during the administration of other purgatives for a

much shorter period. This peculiar combination is of material consequence in the cure of some diseases, particularly in those to which females are subject.

The Sulphuretted Hydrogen, which forms a very useful addition to these waters, is found to render essential service in many diseases, and in some species of cutaneous complaints, has a most decided advantage. This ingredient, which is more abundant subsequent to the fall of rain than at other times, escapes in large quantities on the admission of atmospheric air into the well, and at particular seasons, in a manner difficult to be accounted for.

Thus much on the general nature, and chemical qualities of the Cheltenham Waters;—their medicinal effects come next under consideration.

PART II.

General Effects of Cheltenham Waters.

AN unpleasant feeling tending to drowsiness or head-ache succeeds upon first commencing their use, arising in an indirect manner from the action of carbonic acid gas upon the stomach. This effect soon goes off, particularly on remaining quiet some time after, and upon a longer continuance in their use, this sensation will be found to become less observable.

The immediate feeling in the stomach upon taking the usual quantity is cooling and grateful, followed by a consciousness of an increased activity in the natural action of the intestines, which is at length diffused throughout the system generally.

When taken at intervals of a quarter of an hour or twenty minutes, in the quantity of from

half a pint to two pints, they speedily and effectually act as a mild aperient, without inducing griping, or the occasional debility and langour, which often ensue from other purgatives. This is in a great measure to be attributed to the minute state of division in which the salts are dissolved, and to the iron, whose tonic effects are of very great consequence.

The purgative operation takes place at various intervals : in some it is almost immediate, in others, the bowels are not acted upon for half an hour or even two hours. This will necessarily depend much upon the nature of the disease and the natural constitution of the patient.

Those of a costive habit should not suddenly commence taking these waters, previously to the use of medicines, which effectually remove this inconvenience : otherwise there is a risk of producing distension of the stomach, tenesmus, and unpleasant feelings in the head ; but with this necessary caution they will be found to produce a most salutary influence.

The above unpleasant feelings are generally transitory, but from inexperience as to this fact, many, who are deterred at the onset from persevering, soon become convinced of the cause.

In some people, of weak and irritable constitutions, notwithstanding the previous use of some aperient medicine, these waters will excite more or less of griping. It will be, however, generally speaking, trifling, and not permanent, nor are the patients to be alarmed at it; for where the secretion into the bowels is not healthy, the very action of the fluid in such subjects will create slight uneasiness.

Under proper limitation, when a suitable quantity is specified, a steady perseverance in their use will be found to strengthen digestion, regulate the alvine evacuation, improve its quality so as to become eventually perfectly natural, unattended with any unpleasant consequences, the appetite becoming sensibly better, and the constitution itself invigorated.

Where a purgative effect does not follow their use, they generally act by the kidneys; by no means an unfrequent occurrence, and which fact has indicated their administration where diuretics are required. Where the disease exists in the stomach, their influence in this way will in most instances prove as salutary as if they acted upon the bowels, holding however in recollection, that these organs should not be considered as capable of sustaining so long a continuance in their use as when they act upon the intestines.

Where no unusual obstacle occurs, the effects from appropriate administration of these waters are as salutary as observable, more particularly upon the different emunctories—succeeding to their primary effect upon the stomach, an increase of sensible and insensible perspiration ensues, the secretions in general become influenced, the urine in particular gradually recovering its natural appearance.

Their action on the surface is manifested

by a glow extending to the fingers ends, followed by warm perspiration on exercise, and also by the removal of cutaneous eruptions of long standing, which resisted other means. In such cases it is astonishing what benefit has ensued, not only with respect to the particular disease, but to the general health.

These beneficial results must arise, from an improvement in the functions of the stomach and intestines in the first instance, and from a restoration of healthy condition of the other numerous actions of the body, which so much depends upon this cause, in an indirect manner.

There are a number of unpleasant circumstances arising from taking mineral waters, and sea water, in which saline productions exist, which are seldom or never experienced during a course of those of Cheltenham : such as nausea, thirst, dryness in the fauces, heat and oppression, febrile action, increased circulation, and irregularity of bowels.

From all fluids containing carbonic acid gas, when taken into the stomach, some sensations in the head pretty generally arise, and from this cause a similar result is experienced upon commencing these waters: this however is but of short duration, but as it depends in a degree upon the quantity, that water which contains this gas in the least proportion should be first used, to avoid the hazard of inconvenience.

Although the result of modern experiments, has proved that fluids pass with surprising rapidity from the stomach and intestines, yet in some instances, this process is not as rapid as is even necessary—hence distention and a feeling of general fullness ensue, which affect the head, and add to what is above alluded to. In other instances, a distended stomach pressing upon the abdominal vessels, and so determining towards the head is the cause of this unpleasant feeling.

As from different kinds of purgatives, the rectum partakes of some uncomfortable consequences, more particularly from aloes and its

compounds ; so from that water of Cheltenham, where Muriate of Soda abounds, a troublesome feeling in this part, has often been experienced : a fact of some consequence, in respect to the salutary results that have frequently arisen in disease, from a natural determination to this part.

Cutaneous eruptions of herpetic and other kinds, small phlegmonous tumours, and what are commonly called pimples, are also a consequence of their use, and this more particularly from incautiously entering upon one kind of the waters, after having for some time previously taken another.

In some instances, diseases will as it were remain dormant, until patients have entered upon a course of Cheltenham waters : all this from some unaccountable peculiarity of constitution, which may be further exemplified in the case of a lady from the West Indies, who was habitually subject to ophthalmia, with which complaint, upon her using the waters, in 1808,

she was severely attacked, and again upon a further trial, in 1819, when under my care, a like consequence followed.

In those who are predisposed to gout, an attack of the disease has supervened upon the use of these springs: the fit however in such instances, has, generally speaking, been much milder than usual, and the constitution has afterwards become proportionally invigorated.

These cases occurred where constipated bowels habitually existed, and where an imprudent commencement of the waters was entered upon, without any previous preparation, a practice which cannot be sufficiently deprecated. The patient thus frequently suffers great inconvenience, and his confidence in a remedy is lessened, which, taken under proper rule, might prove of infinite service. This observation is peculiarly applicable with reference to females, who from the delicacy of their habits, are more obnoxious to uncomfortable consequences of this kind.

In those females, who are feeble and of irritable constitution, oedematous swellings of the legs and ankles sometimes arise from commencing the use of the waters in an over large quantity, which not passing off freely, produce distention of the stomach, and other unpleasant symptoms. A smaller dose will be found to obviate this inconvenience, and to act most favourably. These consequences also ensue from persisting in the use of the waters for too long a period, as well as from an over-large quantity, for the salutary influence of a remedy must not be expected to be progressive, and after a certain extent, effects quite different from those to be expected will often arise, indicating the impropriety and danger of proceeding farther. It is to this abuse of the waters, that many patients during their use have been affected with troublesome symptoms of indigestion. Because a remedy has acted well, we are not to proceed with it, when we have no further need of it, for although by its action it may have superseded a disordered state of the stomach, yet its very continuance in an organ just recovered, may act

as an irritant, and again induce disease. It is to this cause, we are to attribute many of the supposed failures of the Cheltenham waters.

These unfavourable results may also at times arise from taking the waters heated, by which they are less grateful to the stomach, being by this process deprived of part of their carbonic acid gas, and suffering a partial decomposition. Hence this practice is erroneous, and except in some particular cases, they should not be taken after exposure to heat, and then but at the commencement of the course. Smaller doses answer every purpose much better, or taking, as is the custom at Tunbridge Wells, some aromatic or stomachic tincture previous to the usual and proper dose, or admixed at the moment.

Such is the general detail of the effects to be expected from the Cheltenham waters, which acting so mildly and effectually, without at the same time inducing any debilitating consequences, like other purgatives, must ever render them a favourite remedy with the faculty,

as well as with invalids, who, from the usual and repeated administration of medicines under different forms, become wearied, and willingly confide in what may be called a natural remedy, from the character of which, the celebrity of these springs promises to be perpetuated.

The number of wells, from which the waters now flow, exceeds one hundred, so that the supply at any future time may be depended upon, as fully equal to an immense consumption.

PART III.

*Diseases in which Cheltenham Waters
are useful.*

IN proceeding to consider the different unhealthy states of the system, in which Cheltenham waters have been found useful, it will be

next to impossible to adhere to any exact rule of classification, as those in which they have often proved of material advantage are of very different denomination, and opposite character. With the exception of diseases of an acute kind, some spasmodic, and other nervous affections, the consequences of general relaxation and debility; there are very few among the innumerable morbid conditions of the human constitution, in which these waters will not prove beneficial.

The diseases however in which they are most decidedly useful, are—*first*, those of digestion, whether depending upon the state of the liver, stomach, or intestinal canal, from which arises so considerable a variety of unhealthy action, and a vitiation of that function by which our food is converted into nutriment;—*second*, their influence upon a morbid state of the liver, its membranes, its ducts, and its secretions, whether as to quantity, or quality, is often most salutary;—*third*, to these may be added certain obscure inflammatory diseases, unattended with

high febrile excitement—*fourth*, some peculiar female complaints, accompanied with a deranged state of the digestion, or, in some instances, proceeding from it; and *fifthly*, with these, as rather a consequence of those already stated, some nephritic affections may be included. Generally speaking, under these heads are enumerated the principal diseases, in which advantage is likely to ensue from these waters. To particularize every complaint, would lead to a lengthened detail of symptoms, incompatible with the extent of the present plan, which must serve merely as the outline of cases to which the waters are strictly applicable.

Indigestion.

THE symptoms of indigestion are very numerous, arising from a great diversity of causes, which renders advantage from the use of Cheltenham waters by no means as general as what

may be supposed, independent of aid from other means, and particular adherence to rule.

In cases, where a sensation of weight in the region of the stomach prevails, accompanied with a privation of appetite, nausea, and distaste of food, vomiting, eructations of wind, with feelings of distention; fetid flavour in the mouth, tainting the odour of the breath, a vitiated state of the secretions, betraying itself by what is usually called heartburn, frequent discharges of acrid fluid of an inflammable quality, or so sharp as to irritate the fauces and corrode the teeth; either separately, or conjointly, considerable benefit may be expected from a regular and well directed course of these waters.

These symptoms which more immediately appertain to the stomach itself, are in most cases, where they amount to any considerable degree, more or less accompanied with a pretty generally deranged state of the system—periodical pains affect the head, particularly its anterior part, peculiar lethargic sensations come

on, some time after meals; a species of apathy or indifference to surrounding objects follows, with heaviness and languor; this shews itself in the eyelids, and the eyeballs are felt as if darting from their sockets; a puffed or oedematous appearance of the eyelids is observable in the evening, their edges having an inflamed and reddish tint.

During the morning and fore part of the day, many of these symptoms absent themselves, again returning however during the time of digestion; and should this diurnal train of mischief not be checked, the nervous system is called into morbid action, and the misery of the patient is increased by unrefreshing sleep, frequent startings while he slumbers, disturbed dreams, or a total absence of sleep, or unconsciousness of having even slept.

During this time, the tongue is coated with a brown tenacious fur, which generally occupies the centre, but often appears in large quantities thickly spreading over the surface, inducing

nausea, vomiting, and attended either with obstinate constipation, or an imperfect evacuation of an unnaturally dark coloured and offensive nature. This appearance of the tongue is most evident in the morning. Such is its state in those of a sanguine temperament, while in nervous patients, labouring under dyspepsia, it is covered with a whitish or pale liquid slime, the edges appearing streaked with red.

In other instances the tongue is of a cherry red colour over its whole surface, with more or less cracks or fissures, and an unusual prominence of its papillæ. It is here protruded with a weak and tremulous motion. This cherry red appearance of the tongue, indicates more than any other, a debilitated and unhealthy action of the stomach.

A further continuance of this state of the stomach, is certain to extend its consequences to the intestines, which are pained and distended along their course, affected with tormina, pain on pressure, obstinate costiveness, and an in-

crease of this constricted condition;—a determination to the head now becomes more constant, and is followed by vertigo, transitory defect of vision, and partial loss of memory, the countenance is sallow, the spirits depressed, and the whole frame so irritable, that the desire for relief becomes importunate.

In the first efforts to remove this distress by purgatives, the evacuation consists of hardened *fæces* in detached *scybala*, covered with an adhesive mucus; or of inefficient watery stools, which do not lessen the calamity, but increase the debility.

In this stage of the disease, the urine will assume various appearances, depending upon the organ more particularly affected, and upon the constitution of the individual. It will sometimes be in a larger, sometimes in a smaller quantity; at one time clear, at others depositing a copious sediment, whose colour will depend upon the temperament of the patient, upon the seat of the disease, and upon the kind of food

taken. In the sanguineous, I have, generally speaking, found it red and gravelly; in the nervous, white and mucous. Where the stomach is the organ principally affected, it will frequently deposit a chalky whitish sediment, which will assume a pink colour, where the intestines are out of order; and should the functions of the liver be deranged, it will have a still darker colour and a greater sediment. Although these appearances are common in this stage of indigestion, yet they will be sometimes found to be fallacious.

These appearances of the sediment of the urine will frequently be found alternating with those distressing symptoms, which affect the head. The more the head is affected, the smaller will be the quantity of sediment, and where there is very much drowsiness we shall often observe none. A degree of scalding is by no means an unusual occurrence in indigestion, in which case the urine seems to be of a more acrid nature, and deposits a red brick coloured sediment.

In the advanced stage of the disease, the chest is affected with a fixed or transitory pain, at one time under the sternum, at another to the right or left side, extending around the back, or affecting the diaphragm. The larger muscles of the extremities are irritated by pain, or their fibres by irregular spasm, wearing the appearance of rheumatic affection—and to add to the train of anomalous symptoms, by which the patient is filled with alarm, and the physician with doubt, this irregularity of muscular action extends to the heart, producing all the concomitants of nervous palpitation, syncopé, irregular pulsation, and general distress.

From the accurate resemblance, which some of the above symptoms have to those of diseases of an inflammatory nature, a mode of treatment has not been unfrequently adopted, attended with disagreeable consequences.

After the necessary preparation, and a due observance of rule, the Cheltenham waters will, under the above detailed circumstances,

be attended with decided advantage, and in furtherance of this, the use of the hot bath, will materially aid their operation.

At a season of life approaching to that of fifty years, from various remote causes, whether casual or constitutional, or with reference to peculiarities attached to each sex, the previous conditions of stomach complaints often lead to more confirmed disease. Men of sedentary habits, whose minds have been employed on subjects requiring intense thought, anxious and unwearied application, or deep research, are frequently sufferers from some of the symptoms already enumerated. At this time of life, in those particularly who have already experienced indigestion in a minor degree, the state of the stomach requires more than usual care; and where the insidious advances can be in time detected, an early attention must be exercised to obviate an increasing evil.

At this period the circulation through the viscera is more languid, and subject to obstruc-

tion, hemorrhage follows from hemorrhoidal tumefaction, or from other causes—feelings of the stomach's incapacity to perform its functions succeed: a varicose state of the veins takes place in the lower extremities, which at the same time become somewhat oedematous. To these follow constipation, flatulency, headache, sense of weight about the præcordia, nausea, sympathetic cough, impeded respiration, and various uncomfortable feelings in the head. During this time the fæces are found of a dark or leaden colour, without a due admixture of healthy bile, and containing a portion of the aliment in a half concocted state.

Previous to quitting this part of the subject, it would not be judicious to pass unnoticed a local disease, with which the above symptoms are more frequently connected than is commonly supposed—a diseased condition or strictures in the rectum or lower intestine.

This disease, known to the Greek and Roman physicians, and mentioned in detached publica-

tions by many modern authors, is often of most serious moment—indeed during the time of Ruysch it was deemed incurable. Dessault considered this complaint and its modifications, as generally depending upon a syphilitic origin. In the *Nosographie Chirurgicale* of Richerand, this opinion is adopted, and M. Petit, when speaking in a general sense of a diseased state of the rectum, says, “J’ai vu tout l’intérieur du rectum jusqu’à le S. du colon variqueux, ce qui fait une maladie bien grave, de laquelle, j’ai vu peu des gens guerir excepté les malades, que j’ai soupçonné d’avoir *la verole*.” More particulars relative to this disease are fully treated of in Mr. Thomas Copeland’s “*Observations on the principal diseases of the Rectum*,” where its mode of treatment with successful results may be found. Suffice it to say, that in obstinate cases of constipation, attended with some of the symptoms already mentioned, a strict scrutiny as to this point should never be omitted, as an obstruction or stricture in this part, produces a deranged condition of the whole tract of the intestines.

This disease is at first often supposed to be hæmorrhoids, as it is not attended with much inconvenience, but as the obstruction increases, the interior of the intestine becomes studded with tubercles, or intersected with fibrous filaments, and from this, or a hard ring of a cartilaginous feel, issues a thin sanies or blood, more particularly upon the bowels being moved, at which time the fæces are passed in small pellets, or in scanty fluid evacuations, attended with tormina and considerable pain.

In diseases of this latter character, the effects from the Cheltenham waters must only be expected to assist those means of a much more powerful and different nature, which may be required towards alleviating so formidable a local complaint. Combined with alterative remedies judiciously interposed, they are nearly certain of being followed by most favourable consequences.

The disorder called hypochondriasis, or that condition of disease in which the mind

and body participate, is generally characterized by a deranged state of the stomach and bowels. The flow of bile is either scanty or bad in quality, the urine is high coloured, and loaded with a thick mucous and unnaturally large quantity of a dark ropy sediment: it is in some instances however, pale, particularly in those of an irritable nervous constitution, the perspiration is partial, and irregular in its flow: there is frequently acidity and flatulency of the stomach, irregularity of the appetite for food, distention of the abdomen, accompanied with constipation and straining at stool. These symptoms increasing in a more or less aggravated degree, induce nervous irritation, dejection of spirits, timidity, despondency, irresolution in matters requiring an exercise of the mind, suspicion and dread of danger from causes or events of no moment, even of the most trivial—restlessness and anxiety, a negation to the usual habits of exercise, a shyness and fear of mixing in the society of those once highly esteemed, and a privation of sleep or a want of refreshment from this solace. To add to this long enumeration, the different

parts of the body sympathize to such a degree, as to arouse suspicions in the miserable patient that he is affected with every disease, to which the various parts of the body are obnoxious.

In different individuals, according to age, sex, constitution, temperament, &c. these and many other symptoms are so remarkable, the variety and absurdity of some, as well in number as in singularity, are so great, that a more lengthened detail would quite exceed the intended limits of this publication.

In this latter disease, the morbid sensibility is much more considerable, than what is found to accompany the usual symptoms in the different degrees of indigestion; hence the treatment requires more circumspection, and great experience in the application of the appropriate means. With these, the Cheltenham waters will be found of essential service, given either during the progress of cure, or with a view towards its completion. They should, however, be taken upon the spot, and agreeable to strict

rule, great dependance being laid at the same time upon exercise in the open air, particularly upon horseback. Great advantage will also be experienced from the change of scene, variety of amusements, cheerful society, early hours, abstraction from business, and the general routine followed at Cheltenham, where the imperceptible influence of a pure and dry atmosphere, likewise contributes so essentially towards the restoration of health.

In young persons of the sanguineous temperament, an eruption of a scurvy herpetic kind, which is by no means of an uniform or definite character, is found to occupy the face and the superior parts of the body. It falls off in furfuracious scales, which are renewed in succession, increasing and diminishing according to that particular condition of the stomach, on which they principally depend; obstructed perspiration, particularly in the head, most generally accompanies this complaint, and during its continuance, the hair will be found dry and much deprived of its natural pliability. These

eruptions are difficult of removal, an object not to be obtained without a diminution of their original cause, which will frequently be found existing in the stomach and its appurtenances.

A modern French physiologist, of great ingenuity, M. Bichat, attributes these anomalous symptoms to that species of communication called sympathy, which he says exists in a greater degree between what some denominate secreting surfaces, and which he calls tissues, than in other parts.

Examples are innumerable, which tend in a great measure to confirm this opinion; one may suffice for its simplicity. A gentleman having one of his legs affected with a disagreeable herpetic eruption of some years continuance, found upon its receding, that his stomach became dyspeptic, and upon a cessation of the latter symptoms, the former returned, and so on alternately. This and other examples of a like kind shew in the clearest manner, how very much the digestive organs influence the state, and condition

of the skin. When we take into consideration, the importance of those functions, which the stomach and intestines perform in the animal economy, being the grand medium, in which our food is converted into nutriment, and in which, the remedies towards the removal of disease exert their influence, we are not to wonder at the varieties of morbid appearances, which manifest themselves in distant parts of the body, when a derangement of the healthy action of the viscera has for any length of time existed. Hence the salutary consequences arising in cutaneous diseases from a course of these waters, must be accounted for on no other principle, but an improvement in this function, which is followed by the skin becoming smooth, and free from eruption, while the general health partakes of the improvement.

Allied to these eruptions, is an aphthous appearance, occupying the tongue, inside of the mouth, and fauces. From neglect, this will extend to the angles of the mouth, and terminate in unsightly ulceration. These aphthæ are at

times exceedingly irritable, more particularly when they occupy the upper part of the gums, at which time the motion of the lips is attended with extreme pain. They are sometimes round, sometimes oval, generally about the size of a split pea or smaller, and will occupy the parts from four to ten days, or even more. They are much more irritable upon the under part or edge of the tongue, than upon its upper surface. As this modification of disease has its dependance upon a similar cause as the former, the means of cure are the same. Generally speaking, the sulphuretted saline, is the water to be preferred in these cases, and its use should be persisted in for some considerable time; should feverishness, however, accompany the eruption, the pure saline is most suitable.

The Cheltenham waters are of considerable utility in that diseased condition of the intestines arising from obstruction, or partial constriction of some portion of the canal, indicated either by distressing constipation, or an imperfect purging of slimy watery fæces, which cause in parts a

species of chronic inflammation, arising from an irregularity in the distribution of the circulating fluids. This is accompanied by tumefaction, and pain upon pressure, sometimes referred to a particular part, whilst a deficiency of the biliary and mucous secretions exists, producing the evacuation of hardened excrementitious matter. In females, who are not accustomed to attend to their bowels, these symptoms are followed by tumefaction of the ankles, chlorotic appearances, hysterical affections, and a general deranged state of the system.

As a relaxed though imperfect evacuation is frequently a consequence of this train of appearances, purgatives are supposed to be improper;—on the contrary, there is no state, in which those of rather an active kind are more required, notwithstanding the usual apprehension that purging produces debility. After their use for some time, the regular trial of these waters will lead to the most desirable issue. Under the last mentioned state of disease, the compound extract of colocynth will be the most

useful cathartic, and followed in the morning by a suitable dose of the waters, which must be taken regularly until the appearance in the evacuations becomes improved. When this takes place, the pill may be omitted, and the water persevered in singly for some time longer.

In children, the disease called *Tabes Mesenterica*, may with propriety be included under the head of indigestion, being from its commencement, accompanied with an impaired condition of the stomach, and alimentary canal. Its causes are manifold, but too often indirectly depend upon a peculiarity of constitution, sometimes of a scrofulous character. Errors however, in diet, either as to quantity or quality, is one of the most common and immediate exciting causes, which should be with great care avoided, where the disposition to the disease may be detected. At this early period the power of assimilating food is often weak, and this debility extending to the glandular structure of the mesentery, obstructions ensue, and a consequent diminution of nutrimentitious fluid, to this suc-

ceed languor, emaciation, swelling of the abdomen, pale countenance, constipation, various coloured stools, irregularity in the action of the kidneys and skin, fetid breath, and general hydropic appearance.

Where the above mentioned symptoms exist, the waters should not be entered upon, without previously using those alterative means known to the faculty, except in the incipient stage of the disease, where their use will often prove curative; but in no one morbid condition to which young persons are subject, can the event be more uncertain, than in this insidious complaint. Worms often increase the mischief, and to them as a primary or secondary cause, or to a peculiar condition of irritation existing internally, symptoms of epilepsy manifest themselves with more or less violence. Should these be fortunately removed, their return may probably be obviated in the best manner, by a judicious administration of the Cheltenham waters.

In these several conditions of diseased action in functions of such importance, the waters may be followed by the most favourable consequences, yet there are cases of peculiar idiosyncrasy of constitution, attended with nervous irritation, in which their effects are by no means so salutary, and this more particularly, where from indulgence in wine and free living, there exist privation of appetite, and considerable debility. In many instances, errors in the use of the waters have been followed by circumstances so discouraging, as to injure the confidence, of which a remedy under proper management is so very highly deserving.

Difference of constitutions occasions a most considerable variety in the shades even of the same species of disease, and a remedy which in a general sense may be esteemed as suitable to a very great number, may in many instances prove exceptionable. This observation cannot be too strongly impressed upon those, who without circumspection enter upon a means of such particular activity, the use of which may be

followed by such unexpected results. Where the head is in the first instance affected, it will be injudicious to proceed, without previous preparation. However in many instances, as before stated, evanescent head-aches follow the use of the waters, which upon the further continuance of the remedy cease spontaneously.

In nearly every case of indigestion, where these waters are deemed suitable, their ultimate effects will be rendered more certain, should they be in the first instance, assisted in their operation by the use of cathartic medicines. This is more particularly necessary, where a constant condition of costiveness has previously existed, accompanied with an imperfect secretion of those fluids, we have before mentioned, as in all such cases, with few exceptions, the quantity of water requisite, often produces distention and inconvenience. The cathartic should be taken at night, and the necessary quantity of water on the following morning, and so on until a moderate dose of the latter is found equal to the desired effect.

In a judicious selection of the most suitable cathartics, a considerable degree of judgment is often required, as in different constitutions, the effects from each will be frequently found to vary; and as much depends upon this point at the onset, the most particular attention should be paid to it.

The most simple purgatives answer best in delicate constitutions, but when resistance is given to their influence, those of a more compound or active kind must be resorted to. Combinations of mercurials and antimonials are used with advantage, but in their administration both prudence and circumspection are required; for in the present day, where mercurials are with such freedom distributed by the ignorant, examples are not wanting, where the effects from the remedies have been of much more melancholy duration, than the diseases they were intended to remove. The certainty of this modern discovery should induce the public not to use without due consideration, means so powerful and often so dangerous. Mercurials, how-

ever, under certain circumstances, and exhibited with extreme prudence, are undoubtedly the most useful auxiliaries to the Cheltenham waters.

When the evacuations from the bowels assume a more natural appearance, the waters should be solely depended upon, as they will be found sufficiently powerful, without any extra assistance, and the healthy tone of the stomach will be much sooner restored, than by a continuation of active cathartics.

Having mentioned the different kinds of waters, and specified them by numbers, the best mode of applying each, as suitable to the symptoms of indigestion, may be thought requisite. This must much depend upon a previous experience of the effects of remedies on the patient, and in default of this, upon the actual trial of that kind of water, which may best agree.

In most instances, the pure aperient saline will answer best to commence with, and should

progressive amendment follow its use, it will be injudicious to change it for a water of different quality.

The sulphuretted chalybeate saline, combines a tonic and aperient effect in a most desirable degree, and added to these, its action upon the skin in the different cases already mentioned, will be found as salutary as the water of Harrowgate, where sulphuretted hydrogen gas has so powerful an agency. This gas to many is so nauseous, as to occasion considerable reluctance at the commencement, but which, by a perseverance in the use of this water, becomes less and less disagreeable.

In all these cases of disease, wherein the waters are indicated, exercise, particularly on horseback, early hours, and proper regulation as to diet, must be enjoined. With these, the periodical use of a warm bath, at a degree of heat most suitable to circumstances, will most materially assist.

Hepatic or Bilious Diseases.

BILIOUS diseases are so denominated, as proceeding from redundancy, deficiency, vitiated quality, or irregularity of the secretion of bile, or from impaired digestion, as a consequence of these several conditions. Their causes are often very obscure, and so complicated in their character, as to assume the most deceptive, and various appearances, in different constitutions.

Since our very general intercourse with tropical climates, liver complaints have been much more common amongst us, but independent of that cause, within our own country, frequent instances of those diseases are to be met with. When we consider the structure of the liver, its great vascularity, its texture and size, the immense current of blood that flows through its substance, its anatomical formation, and connection with other organs, its important and unceasing functions in the animal economy,

the dependance our well-being has upon the healthy performance of these functions, we are rather to wonder that diseases of the liver are not even much more frequent. It hardly yields in the importance of its functions to the stomach, and, like the stomach, there are few parts of the body which do not sympathize in its affections. It constantly partakes in almost every instance of the general derangement arising from impaired digestion, of which a general account has been already given; and on the other hand, where the primary disease exists in the liver, a deranged state of the stomach, and some portion of the intestinal canal, is sure to follow in a greater or lesser degree.

An inflammation of the liver of an acute or chronic kind, is a disease of serious consequence: in the former, its progress is so quick, that the most active means must be used for its removal: but in the latter, the Cheltenham waters may be taken with great advantage in conjunction with other remedies.

In the acute kind, blood-letting, both topical and general to a considerable extent, aided by purgatives of an active description, are indispensable towards subduing the inflammation. A course of the waters, under these circumstances, may be attended by the most alarming consequences: they are altogether inadmissible in this form of hepatitis, and temporizing in their use has often induced considerable mischief: indeed in two recent cases, this inert practice was nearly proving fatal.

In chronic hepatitis the action is of a more slow and less alarming character, attended with but little fever or pain, except a scirrhus state of the organ ensues, which augments both, causing an acceleration of the pulse, and increased pain in the side affected, and ultimately a vitiated state of the secretions.

The commencement of this disease is so insidious, and its progress so slow, as often to deceive the patient, until symptoms of indigestion, privation of appetite, vomiting, a sense of

weight in the region of the stomach, a bitter or nauseous taste in the mouth, furred tongue, pain under the sternum, connected with an obtuse aching in the right side and shoulder, give pretty clear evidence of the character of the complaint. We should however be extremely guarded in our prognosis at the commencement of this complaint, as its symptoms are very similar to those arising from a diseased condition of the duodenum. In the latter disorder, there will be more evident external tumefaction, the pain will be experienced rather more towards the left side or over the pit of the stomach, extending towards the back or kidney; pressure will create more uneasiness between the breast-bone, and navel, than along the edge of the ribs. In fact, stomach symptoms will be more evident than where the liver is the seat of the disease, and the patient will often accurately trace the course of the duodenum, when pointing out the situation of his uneasiness. The urine too will be here often found of a white chalky colour.

The liver is found indurated, either generally

or partially, on pressure there is an increase of pain, and a symptomatic feeling of the like kind in the right shoulder, and sometimes in the left, extending down the arm. At this stage the adnata of the eyes, and indeed the whole countenance, assume a yellowish colour; languor, depression of spirits soon follow, attended by restlessness or imperfect sleep, and incapacity of having repose except upon the affected side, cough, difficulty of breathing, particularly upon inspiration; head-ache, at times an intermitting pulse, and a still more deranged state of the functions of the stomach and intestines than formerly, marked by constipation, or an evacuation of clay coloured excrement. The urine is irregular in its quantity, its colour unnaturally deep, and it deposits a copious sediment.

As the enlargement and induration of the liver increase, hydropic symptoms manifest themselves, in œdema of the feet and ankles, tumefaction of the body or limbs from a lodgment of fluid in the cavity, or in the cellular substance—a fluctuation is perceived, and all the distressing

and often fatal characters of general dropsy present themselves.

These various consequences of this chronic disease are often varied according to the particular side of the organ, which may be affected. When in the convex surface of the liver, pain is induced more easily on pressure, there is more difficulty of breathing, more cough, less uneasiness when the patient rests upon the affected side, than when the concave part of the liver is the seat of the disease, which is accompanied by less pain, and of an obscure character extending to the back and stomach, producing vomiting, nausea, hiccup, and often jaundice from an increased enlargement of the whole organ and consequential pressure or obstruction in the biliary ducts.

As an adjuvant towards the removal of this formidable disease, the waters of Cheltenham have proved of most signal advantage, and this more particularly in that form of the complaint, arising from the unhealthy influence of a warm

climate. In these cases the inert condition of the secreting vessels, and obstructed flow of the fluid is removed, by the gradual and gentle action of these waters upon the extremities of the biliary ducts. By their mild and stimulating property they facilitate the passage of the bile, and promote the absorption of thickened mucus, which might impede the flow of that fluid.

In this complaint, a steady and well regulated purgative action is particularly indicated, and with this view, the object is attained with less inconvenience, and as experience proves, with greater advantage by these waters, than by any other means. They may be given in conjunction with an appropriate administration of some mercurial preparation, or subsequent to its influence, where debility interdicts its further use. In those cases, where the constitution has suffered much from the previous use of mercury, (or even its abuse,) the waters taken alone will be followed by the kindest results.

In these latter circumstances, without pretend-

ing an investigation into its *modus operandi*, experience has instructed us, that the nitro-muriatic bath, as recommended by Dr. Scott, to be applied to the surface, will be of considerable utility, particularly in nervous constitutions, where morbid irritability exists, arising sometimes from those irregular effects often induced by mercury. In chronic hepatitis, a regular and long continued use of the nitro-muriatic bath, with the aid of the Cheltenham waters, produces the most beneficial issue, but particularly so in cases where, by a residence in hot climates, an obstruction to the usual flow of perspiration ensues, in consequence of a removal to our northern latitudes. From this cause there is a considerable determination of fluid towards the liver and other viscera, which produces irregularity of the circulation, congestion, obstruction, and torpidity.

As far as regards the previous preparation of the body in those lately returned from India, and who are about to use these waters, it may be right to observe, that such subjects require

stronger doses of medicine, than those who have not been between the tropics. In India, the quantity of calomel, for instance, given in proportion to that of the necessary dose here, is indeed very great. To those invalids upon their arrival after a long voyage, the same plan must be pursued, though in a somewhat lesser ratio, as their large intestines are generally loaded with an accumulation of hardened fæces, accompanied with a plethoric condition of the larger viscera, which, without the aid of cupping over the part, and the application of leeches to the anus, will cause a long train of morbid symptoms. The latter practice I saw followed with the most beneficial results, both when in France five years ago, and since that period in England. There is nothing indeed which more effectually unloads the surcharged abdominal vessels, and equalizes the balance of the circulation in the diseased viscera, than the detraction of blood in this manner. Much of the efficacy of this practice depends upon applying the leeches as close as possible to the verge of the anus.

After having produced the desired effect by this system of depletion, the use of the warm bath, at a proper degree of heat, will serve materially in forwarding the curative process.

The consequence of inflammation on the convex surface of the liver, is often a firm and sometimes extensive adhesion to the parts in immediate contact by an effusion of coagulable lymph accompanied by slight serous effusions. Where the inflammation affects its substance, congestions of blood, lymph, serum, and mucous bile, impede its functions, and injure its organization, producing tubercular indurations of various colour and consistence.

The symptoms of chronic hepatitis, at one time will arise from an increased softness or hardness of the substance of the liver, at another from its containing cysts, hydatids, earthy concretions, or inspissated bile; even worms, although rarely, have been detected in its substance.—All these occasion an ambiguity in the real cause of hepatic symptoms, but experience

warrants the belief, that Cheltenham waters will generally prove highly useful under any one of these affections, from whatever cause it may proceed. As complaints of this description are generally of long standing, and from a protracted or ineffectual course of medicine, the patient wishes to fly to the gradual and less disgusting process of using mineral waters; success often goes hand in hand with this expectation, and repeated examples are to be found, where Cheltenham waters have proved completely salutary. Not but that in such cases, the event must be doubtful, yet even under such unpromising circumstances a doubtful remedy is better than none.

In any one of these diseases, where the waters are used, the advantages resulting from exercise on horseback must be attended to with regularity and perseverance, as their operation in such instances is materially assisted by this practice.

We shall next proceed to the consideration

of those cases, where the biliary secretion is increased or diminished in quantity, or vitiated in quality. There are few of the cases already described, whether of impaired digestion or diseased liver, wherein the nature of the bile is not more or less altered. Our habits of life, the coldness of our climate, our diet, beverage, &c. create rather a deficiency than a redundancy of this fluid, and even when it is sufficiently secreted, its due admixture with the nutritive mass may be prevented by one cause or other, but indirectly by none more than by the inordinate use of spirituous and intoxicating liquors, which produce general weakness of the coats of the stomach, and consequently an unhealthy state of the neighbouring viscera.

The opposite state, where the flow of bile is unnaturally augmented, occurs much less frequently in northern than in warm climates, yet even in this country, cases are not wanting, where this redundancy is attended with serious consequences. The quantity of bile secreted in a given time in some of these instances is pro-

digious, producing great derangement of the alimentary organs, and of the system generally. In such cases this fluid becomes thin, crude, and acrid in its quality, being of a lesser specific gravity than usual, producing pain and distress in its passage through the bowels, or in the stomach from regurgitation, and all the nausea, sickness, and vomiting, consequent upon a cholera morbus.

Should this condition continue for any length of time, it causes oppression, flatulency, bitter flavour in the mouth, a brown fur upon the tongue, most considerable at its root, thirst, restlessness, languor, and head-ache. To these succeed depression of spirits, drowsiness, unwillingness to motion, incapacity of attending to business, pains and cramps in the extremities, a ticklish or itchy sensation on the surface of the body; and in plethoric subjects, where there is a determination to the head and a short neck, we often find a muttering of unintelligible nonsense, amounting to a minor delirium.

In using the waters towards the removal of this train of symptoms, very small doses should be taken in the first instance, as the irritable state of the stomach, will not admit of distention without danger. By a careful exhibition of small doses, they are found to sooth and progressively diminish this inconvenience.

The admixture of some of the tinctures, which are of a warm tonic description with the usual doses of the waters, is often found necessary. Where acrid acidity prevails, the use of soda under the form of pills is a beneficial addition, or calcined magnesia in its simple form, or combined with rhubarb. The pure aperient saline is best suited to cases of this kind, and when benefit is experienced from its use, the chalybeated saline will be found to follow most appropriately towards the completion of the cure.

Constipation of the bowels accompanied by a deranged state of the stomach, is frequently followed by an unsalutary diarrhœa of a dark coloured mucous bile intermixed with scybala,

a pain about the navel, tormina, and sharp irritation towards the anus. These effects are often removed by promoting a healthy mucous secretion from the inner coats of the intestines.

In some cases of dysentery which do not depend upon an habitual disease, at certain stages of its continuance, the waters may be used with benefit, particularly should a chronic inflammation of the liver have been the remote cause of the disease. Small doses, in conjunction with the alterative medicines necessary in this complaint, will prove of the greatest utility.

The chalybeated saline is the most proper in such instances, and should the evacuations be of a peculiarly offensive odour, or cause much pain or griping, the effects from this water will produce an alleviation of those distressing symptoms.

They will also exert a singularly good effect, where from the consequences of remittent fevers in the East, and yellow fever in the West Indies,

patients are harassed with bilious diarrhæa or vomiting, or any of the symptoms already described. As the sequelæ to these fevers, we frequently find the liver indurated, and the spleen enlarged, which give rise to most unpleasant hydropic symptoms. The prognosis is always unfavourable in such cases, yet if the Cheltenham waters cannot altogether cure the complaint, they at least when combined with other proper remedies materially assist in diminishing the protracted sufferings of the patient.

The quality of the bile becomes vitiated from a variety of causes, but principally from its flow through the gall ducts being impeded, or from the secreting functions of the liver being performed in an imperfect or irregular manner. The former of these circumstances frequently arises in those advanced in life, from a formation of gall stones, which by their sticking in or impeding the passage through the main duct, either create a spasm of its fibres, or from their oversize induce a paralysis of these fibres, and so weaken their muscular power.

The symptoms during the existence of biliary calculi are sometimes very characteristic of the disease, but their presence within the gall bladder may remain for years, without creating any marked symptom indicating the fact. They are indeed frequently found after death, where during the life of the patient they were not even supposed to have existed.

In young subjects, and even in many advanced in life, the passage of biliary calculi induce every symptom by which inflammation of the liver or its membranes are known, and often with a much greater degree of pain and irritation. If they are of a large size, acute lancinating pain will be felt over the pit of the stomach, so severe as to occasion the patient to cry aloud, to press his body forward as a relief from his agony, to writhe and toss himself in every direction, frequently not for hours obtaining an exemption from his sufferings. The part pained is often so circumscribed, as to appear to the patient not more than an inch or two in circumference, being at the same time attended

with great irritation of stomach, nausea, and vomiting, an aversion for food, and the usual drink. On a further duration of the distress, the pain extends to the shoulders, to the back, and along the course of the diaphragm, accompanied by a sense of coldness about the loins gradually extending itself to the lower extremities.

The state of the pulse in this complaint is no indication, from which we can form an opinion, except inflammation has commenced, for it is sometimes even slower than usual, at times slightly quickened, but in general at the natural standard.

Should the impediment to the natural flow of bile exist for any length of time, the symptoms of jaundice take place, and with it the usual, and often obstinate consequences.

Although the Cheltenham waters cannot be attended with any advantages during the paroxysms of pain accompanying gall stones, yet

in the intervals we shall find them very efficacious. They stimulate the biliary ducts to an increased action, which either promotes the absorption of the calculi, or their expulsion through the intestines. During their exhibition the warm bath should be used at regular intervals. By these means, and proper management, during the paroxysms, all the distressing symptoms of this complaint may in many instances be completely eradicated.

There are few diseases which give greater uneasiness to the patient, or anxiety to the physician than jaundice. Its causes are numerous, but it most generally proceeds from inspissated bile, clogging up the passage through the gall ducts, spasmodic contractions of the ducts themselves, pressure by the neighbouring viscera, diseases of the liver, indurated fæces impeding the flow of bile, and, as before mentioned, from biliary calculi.

Its commencement is marked by symptoms

of indigestion, sense of weight over the region of the stomach, pain extending towards the back, or in one or both shoulders, bitter taste in the mouth, heat and feeling of titillation over the surface, which becomes of a deep yellow, the adnata of the eyes having an appearance of a gold colour. As the bile becomes more vitiated and stagnant in the liver, the colour of the skin assumes a deeper shade, and is at length of a greenish or dusky black hue. During this time, the urine is of a deep brown colour, being saturated with bile, and imparting to linen a yellow tint; the bowels are either obstinately costive, or harassed with a diarrhæa of light clay coloured stools. The pulse is not much affected, except during considerable pain of the side, when it is accelerated, although in this complaint it is generally slow.

In the extreme stages of this disease, a biliary tint is given to all the secretions except the milk, desquamations of the skin, and brown spots cover a livid and dark surface; the cuta-

neous glands are rough and obstructed, and the disorder at last terminates in passive hemorrhagies and ulcerations.

At the commencement of this train of symptoms, considerable dependance may be placed upon the Cheltenham waters, but where the causes enumerated have been of long standing, or where the constitution has materially suffered from particular circumstances, the appropriate use of other means must be first called into action, whose effects may be followed by those of the waters. Where much feverish irritation and pain of the right side accompany the jaundice, these waters are to be strictly avoided until such symptoms are diminished.

The warm bath may be safely used in conjunction, at rather a high temperature; and where the disease is accompanied by an enlargement of the liver, and a general derangement of its functions, the nitro-muriatic bath will be found a most useful addition to the other remedies.

Where the patient is capable of using exercise on horseback, the weather being fine, there is no condition of disease, in which it has so often proved of essential service; but a regular perseverance for a length of time is generally required, even after an improvement has taken place in the symptoms.

Inflammatory Disorders.

THE generality of inflammatory diseases are so rapid in their progress, that the most active means are required for their removal. Hence there are but few cases of this kind (more particularly where some vital part is affected) in which mineral waters can be depended upon solely; indeed where febrile action exists to any extent, those of Cheltenham may be deemed altogether inappropriate. From ignorance of this fact, patients on their arrival in Chelten-

ham, while labouring under hepatitis, rheumatism, gout, and ophthalmia, have often rashly entered upon their use, and experienced consequences very different from those, they had confidently anticipated.

Apoplexy, hæmoptysis, inflammatory action of the heart and larger blood vessels, and copious evacuation of blood from the intestines have been known to supervene, with all their fatal consequences, upon a free and injudicious use of these waters, while these inflammatory actions, or some obscure modifications of them have existed.

In that denomination of inflammatory diseases called chronic, where the condition is more of a passive than an active nature, these waters have most salutary effects. Under this head may be enumerated rheumatism, some cases of ophthalmia, gout, obscure cutaneous affections, and anomalous disorders of a mixed character occurring in strumous habits.

In scrutinizing the distinguishing characters of chronic rheumatism, great circumspection is necessary, as erratic pains, bearing a strong resemblance to this disease, are often symptomatic of some organic derangement in parts remote from those apparently its seat. In a strumous habit, rheumatism will alternate with scrofulous ophthalmia, and both of these diseases again with the state and condition of the abdominal viscera; while abscesses and tumours are often the consequences of the different painful symptoms of this class of disease.

It is next to impossible to account for this interchange of symptoms, except by referring it to that inexplicable sympathy, which exists between the most remote parts of the body, nor is it more easy to say how a remedy exerting its operation at another part can indirectly act in subduing these symptoms.

Chronic rheumatism, considering it as an idiopathic affection, is often a consequence of the acute kind, either neglected, or badly treated.

Its duration is most painful and protracted, and were the danger proportionate to the misery it occasions, it would rank among the most formidable diseases, to which we are subject. The circumstance of its victims being more obnoxious to a renewal of its attacks, after it has once seriously shewed itself, is not the least misery attendant upon it.

In nervous people, where the sensation is so acute, the irritation from this disease has been so considerable, that the nervous system alone has been esteemed its seat, and the opinion has been strengthened in that modification of it, termed sciatica, where the pain is principally felt along the course of the sciatic nerve, and in those parts where the larger nerves are distributed. However, without entering more fully into this part of the subject, it may be sufficient to state, that many parts suffer most severely from rheumatism, where there exists but a very small distribution of nerves; in the ligamentous, bursal and tendinous textures for instance, and in the neighbourhood of the larger joints.

There is indeed hardly a texture of the body which is not liable to be attacked by rheumatism, and they are each affected according to the peculiar habit of the patient. Should the sanguineous temperament prevail, the muscular fibre is the most common seat of the disease, whilst the synovial membranes suffer in scrofulous habits.

As a general cause of chronic rheumatism, a partial suppression of the perspiration may be mentioned particularly, and as one of the usual effects of Cheltenham waters is to restore by a gradual and continued influence this important function, their use is often followed by a most favourable change, in some cases of a long and very obstinate duration. Here, as in many painful conditions of the body, the state of the abdominal viscera has a considerable influence upon the disease. The two complaints will frequently alternate, the debilitating and injurious effects from intemperance will cause in rheumatic habits dyspepsia in an aggravated degree, with an alleviation of the rheumatic symptoms; on the dyspepsia subsiding, the rheumatism re-

turns, and so on alternately. The prognosis in such cases is, generally speaking, favourable, for when we can attack any disease through the medium of the digestive organs, our ultimate chances of success are much more probable. By great attention to the exciting cause, it is very evident that by improving the digestion, we shall succeed in alleviating the rheumatism, which, in the days of the humoral pathology, was, like the gout, supposed to depend upon a particular humour pervading the fluids.

In this complaint the warm bath, at a heat of 96° or 98° , used in conjunction with the waters, materially assists towards its removal; but in cases, where the desired effect is not obtained by this means, the vapour bath, from the temperature of 100° to 112° has been followed with the most decided advantage.

Although in chronic rheumatism the perspiration is, generally speaking, more or less suppressed, yet in some instances it is more than usually abundant, at least in particular parts of

the body. This species of complaint attacked in a most aggravated form a gentleman, who lately consulted the author of this tract.

He had been for many years a martyr to the most severe pains affecting nearly every joint of his frame; his sensations were so acute as to indicate the changes of the weather, and whence the wind came, his appetite was nearly suspended, his nights were passed without sleep, perspiration flowed on the slightest exertion from the hips upwards, whilst his lower extremities, although enveloped in flannel during the month of July, were constantly cold; so open were the pores of the upper part of his body, that the very exertion of eating, or even speaking, bedewed him with perspiration, particularly about the head; and his bowels, but more particularly the larger intestines, were much out of order. On directing his attention to this point, and conjoining appropriate remedies with the use of the waters and warm bathing, there was a most satisfactory mitigation of the principal distress. The insalutary perspirations were gra-

dually diminished, the pores of the lower extremities opened, and he could use his limbs for a much longer time without fatigue, than he had done for several years.

On exchanging the warm for the vapour bath in this case, a still greater improvement took place, and the gentleman has now passed over eight months, some of them exceedingly severe, without having a decided attack of his old complaint. I may here observe, that during this period he has been in the habit of occasionally using the Cheltenham waters, whenever his bowels are out of order, and I have no doubt, but by a steady perseverance in the prescribed plan, he will eventually lose all vestiges of the disorder.

In rheumatism, partial perspiration may generally be considered as connected with a morbid and irregular condition of the larger intestines. A gentleman, affected with this obstinate state of bowels, is subject to the most abundant par-

tial perspiration of the right foot, particularly around the heel, which from the frequent exudation has become quite discoloured. In this case, relief is invariably obtained from the Cheltenham waters, assisted as in other cases by some collateral remedy, particularly the warm bath, which, under proper and well regulated restriction, serves more to strengthen and invigorate than other means, contrary to the too generally received opinion of its debilitating and relaxing effects.

With regard to the most suitable water, necessary in rheumatic affections, this must depend upon the symptoms, and exact character of the disease. In almost every case the pure saline should be commenced with, and the administration of the sulphuretted chalybeated spring will be afterwards attended with the best consequences, but more particularly where night sweats and general debility prevail, and in nervous irritable constitutions, where the disease has existed for a long time previously. In these

latter subjects it will be frequently necessary to take the chill off the water during the first two or three days of its exhibition.

There are certain cases of ophthalmia, where the inflammation is more of an obscure dull than an active description, in which the Cheltenham waters will be attended with advantage. In people who are in the habit of full living, we frequently find a tumefied condition of the eyelids, and of the smaller blood vessels overspreading the tunica adnata, accompanied with shooting pains, and a prickly sensation in the parts. In many instances where the real cause is not discovered, a great augmentation of the pain and inflammation succeeds, so as to impede vision. These symptoms in the plethoric and luxurious are often the consequence of a diseased sympathy with some distant organ, and most generally when of long duration prove difficult of cure. A gentleman known to the author, can produce ophthalmia at any time, by exceeding the usual bounds of propriety in eating or drinking, proving, as in many other instances,

how much local diseases seemingly have their dependance upon a deviation from the healthy standard in parts far distant.

A steady use of the Cheltenham waters, from which a regular but not active effect is to be desired, will have more influence in permanently removing this disease, than the local and repeated application of any collyria or ointments. This will be more particularly the case, where this affection of the eyes alternates with obstinate and long continued rheumatism, an occurrence by no means unfrequent.

Should the ophthalmia, however, be *sui generis*, and independent of constitutional connexion, the waters will have no good effect, or rather should be strictly avoided, from the consideration of its being a state of active inflammation, in every modification of which, all means of an inefficient or gentle description, should not be depended upon.

Gout is generally preceded by symptoms of

indigestion; flatulency, nausea, vomiting, pain, and spasmodic uneasiness are not unusually its precursors, previous to its manifesting itself in the usual articulations of the extremities. These symptoms shew the direct and indirect commencement of a disease, which in its simple form is by no means untractable, but which from false theory, and a practice equally as false and erroneous, has too frequently assumed a form of the most complicated description.

In ninety nine cases in one hundred the stomach is the medium through which it is generated, which shews how frequently this disease may be the offspring of our own indiscretions. There are, however, cases in which other causes must be looked for, although there is no complaint in which indigestion of a distressing kind is so often present as in gout, and in which early errors in diet, &c. in habits, where an hereditary propensity exists, may be considered as the remote source of this relentless disease.

When we consider this circumstance, it is

not surprising, that gouty people should derive such considerable benefit from a course of Cheltenham waters, and that several, by drinking them annually, have prevented the usual return to which they were subject. I have my doubts indeed whether an annual course of the Cheltenham waters, and a scrupulous perseverance in moderate living, may not be ultimately attended with an eradication of this troublesome disease, in those habitually predisposed to it; at all events a considerable mitigation of the symptoms may be always expected.

During the feverish paroxysm, and while the inflammatory action exists, their use should be prohibited, but pending the intervals, where alteratives and other means are indicated towards the restoration of a healthy condition in those functions most concerned, these mineral waters will be found of very great utility. It may not, however, be improper to repeat, that by this course, a slight fit is often induced which is generally of short duration, and of favourable issue, rendering the general health

much improved, and the body exempt from an attack of a more serious character.

In the cases just mentioned the pure aperient saline should be considered as the most appropriate, as from certain peculiarities, those waters containing iron, are not adapted to gouty subjects, although so much is not to be dreaded even from their use, if they purge properly. To obviate any inconvenience of this kind, however, the pure saline should be invariably commenced with. In those cases where a generation of acid fluid in the stomach accompanies the usual symptoms, producing heartburn and a flow of acrid matter into the mouth, especially a short time after meals, it may be necessary to give in the afternoon some carbonate of magnesia, until the stomach regains a more healthy tone.

As extremes of heat and cold are prejudicial to the gouty, and particularly cold combined with damp, the most favourable season of the year should be chosen, when these waters are to be used, their operation in such cases

being much assisted by exercise in the open and clear air. Hence the latter part of spring or the beginning of summer should be preferred, at which season of the year a disposition in a greater or lesser degree exists towards inflammation: and those means, which diminish that propensity frequently obviate the early formation of disease. At this time of the year, that habitual indolence, so peculiar to the gouty, is overcome by the cheerfulness of a fine season, and exercise is enjoyed without being overheated, a considerable advantage, when under the influence of any disorder or remedy. This is a circumstance constantly overlooked by the gouty, who have generally a great aversion to motion. They must subdue this, and as far as their strength will permit, keep their limbs in constant exercise, and be as much in the open air as possible.

The salutary consequences thus obtained, are considerably increased in some instances by the use of the Buxton baths, or an appropriate application of those of warm or tepid sea water.

In gouty habits, the quantity of Cheltenham water at the commencement should be small, as from the debilitated state of the stomach, an increase rather than a diminution of the evil, may arise from overdistention. It may be necessary during the first few days to take the chill off the water, or to add to it a few drops of some warm aromatic tincture, to prevent its being felt too cold on the stomach. Throughout the course, gouty subjects should be very circumspect in persevering unadvisedly, should any untoward symptoms arise.

Under the head of inflammatory disorders to be relieved by the Cheltenham waters, may be comprehended certain cutaneous affections, where the inflammation as already described is more of an obscure than an active kind. The number of these is very limited, and their external appearance much varied, according to certain constitutional peculiarities.

As these waters from their gently stimulating properties act in a secondary manner upon the

surface, there are some cutaneous diseases seemingly increased by them at the commencement, but upon a longer continuance, and when the usual operation follows, these troublesome affections gradually subside. Should this, however, not happen after a fair trial, they should not be persisted in, without further consideration as to the cause of failure, which will in many instances be found to proceed from a previous deranged state of the chylopoetic viscera, impeding the salutary progress of the remedy. In obviating this, by the administration of a few purgatives of rather an active nature, the waters will then afford relief in a most desirable manner.

There are, however, some affections termed cutaneous, which are, strictly speaking, superficial, and confined to the cuticle, in which internal means have little or no effect, from the natural insensibility of that covering. But where constitutional diseases are accompanied with those of the surface, the removal of the former must often of necessity precede that of the latter.

It is to such like the Cheltenham waters are more particularly applicable.

There is an eruption which arises on various parts of the surface, of rather an indistinct character: it forms in blotches of a brownish red colour, which terminate in a peeling of the cuticle, upon the removal of which, the under skin is covered with a thin ichorous discharge. These blotches are apt to be constantly renewed in various situations, and leave a roughness behind them, accompanied with an irritability of the parts, which by rubbing is rendered worse. Those most subject to this complaint are children, from the age of eight to fifteen years, and it often appears in the latter, about the period when a certain change takes place in the constitution.

When this disease is deeper seated, an infinite number of small pimples arise in various parts of the body, more especially on the forehead, face, breast, and back. These pimples are round, red, and of the size of a millet seed,

frequently containing pus, and intolerably itchy when the body is heated. The skin is so irritable in these cases, that large weals and inflammation frequently follow friction, whether it be induced by the fingers, or by pressure from the clothing. Under the hat for instance, the forehead will experience a sensation as if a thousand needles were pricking it, nor will this be relieved until perspiration ensues.

Young men of a plethoric habit, and about the age of puberty, are most subject to this eruption, and in them it is often a consequence of sudden alterations from heat to cold, and damp. A privation of appetite, oppression of the stomach, flatulency, nausea, and eructations, accompanied with transitory head-aches, are connected with these eruptions, and as they arise in both sexes about the age of puberty, they are much affected by that revolution, which takes place at this period of life. In many of these cases it will be necessary to assist nature by art, as the emunctories are not of themselves capable of throwing off the usual excretions.

To this end the Cheltenham waters will, generally speaking, be alone found sufficient, as the organs of the body are at this age more easily acted upon than at a more advanced period. This is however chiefly applicable to those cases of purely papular eruptions, for where the disease borders upon the herpetic kind, as first described, it will be much more intractable, and require the assistance of collateral means, of which none will be found more efficacious than the warm bath, sometimes impregnated with sulphureous preparations.

There is a peculiar kind of an eruption, which has been frequently mistaken for the secondary symptoms of syphilis, in which the Cheltenham waters will be attended with greater advantage than any other remedy. This complaint most generally begins with constant headache, particularly about the forehead, which is warm to the touch, general apathy, and frequent rheumatic symptoms. At last some slight pimples shew themselves, which in six or seven days either break, or form irregular patches

upon the forehead, breast, or extremities. These patches are of a very dark red colour, slightly elevated, about the size of a split horse bean, and approaching more to an oval than a round shape. The complaint will mostly be found to attack those, who have suffered from over doses of mercury, or who have been treated for syphilis, where the disease was not truly venereal. This eruption differs from that of syphilis, in the patches being larger, of a dark red instead of a copper colour, and in the disease being throughout accompanied with symptoms of indigestion. From this cause it is to be treated accordingly; irritating means are to be avoided, and the cure confined to those remedies which gently act upon the bowels, and determine towards the surface. In those cases the sulphuretted saline is to be preferred, which in its properties and effects much resembles the waters of Harrogate, but from its more aperient operation it often proves more useful. In every eruptive case a long course of the waters is indispensable, and the least improvement should be looked upon as the commencement of an amendment.

Females are subject to erythematous eruptions on the face, arms, neck and breast, which consist of red patches of an irregular form and short duration, very like the redness produced from pressure. The colour is of a deep shining red, and terminates in exfoliation of the cuticle at very uncertain periods. Slight hysterical symptoms and swelling of the legs often accompany this eruption, particularly during the period of menstruation, or when the digestive organs are out of order. In these cases a course of the waters will prove highly beneficial. They may or may not be conjoined with other remedies as the complaint may require, but the warm bath at stated periods, either medicated or otherwise, will generally be found a most useful addition, particularly in cases of long duration.

There is a species of tubercular disorder, called *Gutta Rosea*, to which men about the age of forty or upwards, or who have lived intemperately, are more particularly subject. It commonly begins with a redness at the end of the nose, progressively extending itself on

either side over the cheeks. At the first attack of the disease the redness is neither of a deep tint or uniform, being at the early part of the day rather pale, but on drinking any strong spirit, or wine, the part becomes intensely red. On the complaint continuing, the superficial veins get enlarged, the cuticle becomes thickened, uneven, and granulated; red lines overspread the face, studded with small tubercles in an imperfect state of suppuration, and these symptoms increasing in an aggravated form, the nose sometimes becomes of an enormous size and of a fiery red or livid colour.

In this disease, particular irritability of stomach is accompanied with privation of appetite, and in some nearly by a total suspension of it, although there exists a peculiar craving for wine. An indulgence in this gratification may not only increase the complaint, but ultimately terminate in some incurable organic mischief.

When once formed, gutta rosea becomes very intractable, but with great attention in the

treatment at its commencement, the diseased condition of those parts, from which its remote origin is derived, may be considerably diminished, and thus its insidious progress arrested. The mode of treatment in some habits must differ materially from that in others, according to certain circumstances, but whether the disease be the consequence of hereditary predisposition, which is sometimes the case, or irregularity in living, the waters of Cheltenham will in all instances be found an useful, if not the safest remedy.

There are certain stages of that painful disease, called erisepelas, or rather in the intervals of the attack, in which considerable benefit has been derived from these springs. When inflammatory action accompanies the complaint, their use is inadmissible, but subsequent to a severe attack, in conjunction with other means they have been known to put a stop to the disease altogether.

In certain peculiarities of habit, an irritable

state of the surface exists in so great a degree, that the application of a blister, excoriation, or the slightest injury done to the skin, even the most simple poultice will cause erisepelas.— A lady had been subject to an annual attack of this disease under the severest form, extending over the head and face, causing much swelling, and delirium to such an extent, that she did not know the members of her own family. After recovering from her last illness, she was advised to try the Cheltenham waters, and from experiencing so much benefit, she has continued to use them regularly these last six years, during the spring and autumn, without having ever had a return of her complaint. The pure aperient saline was the water used in this case. A similar result arose from a course of the sulphuretted saline in the case of another lady, who was very much subject to erisepelas in the face and legs, and who had in an ineffectual manner used the waters of Harrogate. From this it would appear that the efficacy of the Cheltenham waters over those of Harrogate, depends upon their purgative operation.

Indeed in a variety of anomalous cases, which it would be impossible to place under any distinct designation, where the inflammatory action is of a passive nature, we find from mild purgatives considerable utility, particularly in herpetic cases, where there exists a dry state of the skin, an intolerable itching, and a general constitutional derangement. The waters open the subcutaneous pores, and thus promote salutary perspiration, an effect not however to be looked for in leucophlegmatic habits, where the extremities are cold, and the circulation languid.

Female Complaints.

THE diseases of females, in which a course of the Cheltenham waters are of service, might perhaps, with some degree of propriety, be included under one or other of the heads already treated of. With reference to a few, I shall

briefly enter on a separate consideration, and for a more general detail refer the reader to the preceding part of this volume.

From the delicate structure and general formation of females, and from their habits of temperance, they are not in the same degree so obnoxious to violent, acute, and inflammatory diseases as men, yet this very delicate structure does not exempt them from suffering proportionally. Many of their complaints have in the first instance proceeded from sedentary habits and a continued constipated state of their bowels. Partly from diffidence, partly from habit, but most frequently from inexperience as to its ill-effects, they subject themselves to this constipation, than which nothing can be more hurtful to their constitutions. Immense quantities of indurated fæces are thus collected in the larger intestines, whose fibres become so weakened as to be unable to discharge their contents, and ultimately so relaxed as to require the constant use of medicine to stimulate them into action.

In a more aggravated form of this costiveness, hysterical symptoms, faintings, languor, and chlorotic appearance occur; the eyes are yellow, the aspect dejected, and the countenance melancholy: the eyelids become at length of a brown or greenish colour, which will be found to vary from day to day, according to the state of the intestines, and the appearance of the evacuations; and the darker the latter are, the deeper in colour will be the tint of the eyelids.

These symptoms gradually continuing to increase, the disease assumes the regular form of chlorosis—unwillingness to exertion, general listlessness, languor and fatigue from exercise, even in an inconsiderable degree, a depraved appetite, indicated by a desire of swallowing calcarious and other substances, eventually ensue, accompanied with an irregularity or a suspension of the menses, and a total want of energy in the constitution. The menstrual discharge in some of these cases is in small quantity and of an unhealthy appearance,

from which we may infer an unusual languid state of the circulation in the uterine organs.

There are few, if any remedies, attended with greater advantage in diseases of this character, than the Cheltenham waters, as an habitual and obstinate constipation, and an impaired digestion most generally accompany the complaint. In the first instance, however, it will be necessary to act upon the bowels by some of the stronger cathartics, which must be persisted in, until there is an evident improvement of the alvine contents. The chalybeated saline will be then attended with every advantage, being more adapted to cases of chlorosis than the pure chalybeate, from the latter not possessing a sufficiently purgative operation. It is from this cause the chalybeated saline of Cheltenham is, generally speaking, far preferable in female complaints to the Tunbridge waters. Some instances have come under the author's observation, where a residence of many months, and a steady perseverance in the waters, at the latter place, were followed by no

benefit, but on using our aperient springs, a perfect restoration to health has speedily ensued. Such indeed is the indescribable connexion between the good and healthy state of the uterus, and that of the bowels, that expectation will be in almost every case disappointed, except purgatives are used with a regular and steady perseverance, at least until a satisfactory secretion ensues, at which time, the happy combination of the ferrugineous and aperient ingredients in these waters, is never more manifest.

Allied to chlorosis, is Amenorrhæa, or an interruption of the menstrual discharge, which may be considered as of a two-fold nature; the one, where the menses do not appear at the usual period of life; the other, where having once appeared, they are suspended at the expected time. As both conditions may be considered as minor modifications of chlorosis, the mode of treatment must be accordingly, taking however into consideration the age and constitution of the subject, who may be attacked,

Females in the married state, where sterility exists from obscure causes, will generally be found subject to irregularity in the functions of the digestive organs, from which the general state of good health is so frequently interrupted. In such cases, as well as in that state of female disease called *Leucorrhæa*, when independant of organic mischief, or much corporeal debility, the rules above mentioned may serve as a guidance in the use of these waters, which will here seldom fail of giving relief, more particularly when assisted by the powerful aid of horse exercise.

In conjunction with these means every occasional cause of debility should be avoided; early hours, and being as much in the open air as the weather will permit, must be enjoined; the food must be easy of digestion, the drink such as will neither heat or relax the stomach, any interruptions to the intestinal functions, from which female complaints so frequently have their origin, must be particularly attended

to ; in fact, every cause of irritation must, during a course of these waters, be strictly avoided by females, who, from the delicacy of their constitutions, are much more easily and sensibly affected by external impressions, than the other sex.

In some women of a delicate texture and fine skin, scrofula is a very common disease. The waters in such cases, as an assistance to other remedies, will frequently exert a beneficial influence. They more particularly serve as a good preparation in the spring months for a visit to the sea coast, where warm or cold sea bathing may be required; and in constitutions, in which small doses of steel are indicated, their use will prove, generally speaking, highly satisfactory.

Females are very subject to attacks of indigestion, but in them the causes of the disease will be found more frequently to exist in the intestines than the stomach. Slight chronic inflammation of the liver is a common disorder

among them. In regard to both of these complaints, I beg to refer the reader to the early part of this volume ; I may here, however, observe, that in chronic hepatitis, the nitro-muriatic bath generally acts more speedily and effectually in females than in males ; and that in some of their complaints just treated of, it will be found a most useful addition to the waters, particularly where there is much irritability of constitution, and a contra-indication to the use of mercurial preparations. The warm bath is a good adjuvant to the waters in female disorders.

Nephritic Diseases.

IN nephritic cases of long standing, the morbid condition of the kidneys and urinary organs is almost constantly connected with some defect of appetite or of the digestion. If the diseased appearances of the urine are not the effect of

indigestion, the two diseases are so intimately combined, at least in incipient nephritic cases, that it is not easy to draw a line of distinction between them. At all events, nephritic complaints will in most instances be found to attack those, who are naturally dyspeptic, and it is difficult to alleviate even the local disease, without in the first place paying strict attention to the healthy performance of the alimentary functions.

The urine, to be very healthy, should deposit but a small quantity of sediment, which however under various states of the kidneys, their vessels, the ureters, or bladder, suffers partial changes, either as to its quantity or quality. It is sometimes red, dark brown, yellow, whitish, and even approaching to black, the causes of which are often obscure. It would be incompatible with the limits of this volume to enter into the pathology of these appearances, and still less into their chemical differences. It is enough to observe that the Cheltenham waters

are a safe and efficacious remedy under these various conditions, where we have reason to suppose the disease is independent of any organic mischief. From the improvement they cause in the general habit by ameliorating the digestion, many incipient nephritic diseases will be altogether eradicated.

When the sediment of the urine assumes a crystallized appearance, the disease is denominated gravel. This state, like the preceding, is intimately connected with an impaired condition of the digestion, and is frequently combined with gout. It often precedes a fit of that disease, and will sometimes alternate with gouty action. A repetition of gravelly attacks is frequently but the precursor of the regular establishment of gout in the constitution, after which period the gravel is much less prevalent than formerly. At all events the depositions from the urine do not assume the regular crystalline appearances they originally did, being in the gouty more friable and pulverulent, and of a pink colour.

As in cases of gravel, we generally find a more than usual quantity of acid generated in the stomach, from which this disease so frequently has its origin, it is obvious our intentions of cure will be best directed towards an alleviation of the stomach complaint. Towards this end the Cheltenham waters will act most usefully, and during their regular administration, the sediment of the urine will gradually assume its natural appearance.

Much doubt has arisen in regard to the propriety of the same remedy during these two morbid conditions of the urine, seemingly so opposite, as the earthy ingredients are said to be augmented in the former, the acid in the latter state; but as these two conditions are so intimately connected with, (if they do not altogether take their origin from) an impaired action of the alimentary functions, modified by certain circumstances, we are not to wonder if they be both influenced by the same means. It is on this account the waters of this place will act beneficially in diseases of a very opposite

character. In all these cases their operation is materially assisted by the addition of some medicinal alteratives.

When the symptoms of gravel have terminated in stone, it is but trifling with the patient to recommend a remedy, from which no cure can be reasonably expected. Should, however, the formation of a stone in the bladder demand its removal by the usual operation, upon recovery, and in absence of all inflammatory symptoms, the pure saline may be used periodically with the most desirable results, as there is always a danger of the disease again presenting itself.

I have thus as briefly as possible enumerated those disorders, in which the waters are decidedly attended with advantage. In other diseases, such as fistula, scirrhus of the orifices of the stomach, and intestinal scirrhus, worms, &c. they have been recommended, but as their effects are in these cases very doubtful, it is deemed more judicious to omit them, especially

as experience has not warranted the recommendation. Of those complaints wherein these waters are useful, I trust I have given a sufficiently correct, though short account, so that the patient may know whether the condition of his disease is such as to need their administration. To have entered into a detailed account of the infinite varieties of disease would have been incompatible with the limits of this part of my volume. An outline of symptoms is all that was deemed necessary.

PART IV.

*Diseases where Cheltenham Waters are
contra-indicated.*

IN the acute or inflammatory species of each disease already noticed, these waters should not be exhibited, as their effects have often proved

of dangerous consequences, more particularly where much excitement and severe pain are present, even in a minor degree. Under such circumstances indeed, where the symptoms have not been of a very marked character at the commencement, the cases have become much aggravated on using these waters, and in no complaint more than in hepatitis. For this reason, great caution must be observed in any tendency to inflammation in this form of disease.

The same is to be observed in respect to those cases of increased irritability of the stomach and intestines, attended with obstinate and long continued constipation, much pain on pressure, tormina, and symptomatic fever. This train of symptoms is a manifest interdiction to their use, until mitigated in the usual manner; and then advantage may be expected in proportion to the probable danger that might have ensued from their action in the first instance.

These waters are also inadmissible in all

cutaneous diseases conjoined with fever, which are not only regular in their form but in their attack and duration. Although they are used beneficially in complaints of the skin attended with an impaired state of the digestion, yet in exanthematous disorders, of an infectious origin, or accompanied with even partial inflammation of any internal organ or a tendency to it, their exhibition is not only useless, but highly dangerous. Patients, who have been sickening for the small pox, or measles, when those diseases were epidemic, have frequently had cause to lament the injudicious use of those waters, even for a few days.

In most diseases that affect the head, when accompanied by inflammatory symptoms, or by an unequal distribution of blood in that organ, or by any internal organic mischief, Cheltenham waters are a very ambiguous, if not a dangerous remedy. Some affections of the head may arise from a fullness of the stomach, or congestions in the liver or spleen, during which the waters are to be prohibited, until such congestions are

removed ; but in subjects already predisposed, who have large heads and short necks, as observed in the apoplectic and paralytic, these springs should be strictly interdicted. In fact the utmost caution is necessary, for although many complaints of the head are merely symptomatic of diseases of some remote organ, yet it requires a person well conversant in the laws of the animal economy, to know when these waters should be used, and when avoided. Their injudicious exhibition by persons, where the least doubt exists as to the exact character of the affections of the head, or indeed of any other part, may be attended with very alarming consequences.

They should not be used under circumstances of great debility, or in nervous cases, where excessive irritability exists, until the original cause be in a degree removed. But in cold leucophlegmatic habits, where we find an exhaustion of the vital power, a languid circulation, and a diminished nervous energy, there is no question in respect to the impro-

priety of their use. This is more particularly applicable to some old people, whose infirm constitutions will not bear the constant and repeated operation of an aperient medicine.

In all diseases attended with effusion, whether into particular cavities, or into the cellular membrane, the Cheltenham waters may be considered useless, or at all events a means of very doubtful relief. In dropsy, when an idiopathic affection, they are altogether inappropriate, and even when this disorder is connected with a chronic inflammation of the liver, or an enlarged spleen, some impression should be previously made upon these viscera, before advantage can be expected from the waters. Should œdema of the legs and ankles arise during their administration, they should not be persisted in, unless we have reason to suppose the complaint arises from some adventitious circumstances: even then, they should be prohibited for some days.

In cases of active hemorrhagies, whether

arising from peculiar circumstances in females, or in others from inflammatory action, they are likewise contra-indicated, as also when a dysenteric disease partakes of this character, and is accompanied with heat and fever. This caution is more especially necessary, where there is no material derangement of the biliary system.

Consumptive diseases are so constantly attended with febrile action, that it may be presupposed these waters are in such cases improper, as well as in every case of spitting of blood, so frequently the precursor of consumption.

Where spasmodic diseases of the stomach, and of the muscular fibre of other parts exist, their cause should be thoroughly ascertained, previous to entering upon a course of these springs; and here great circumspection and caution is necessary to obviate errors in their administration.

In some cases of urethral stricture, in habits

naturally irritable, an increase of the complaint has often taken place from the effects of solutions of iron in any form. Hence experience has pointed out this objection to the use of those waters at Cheltenham which contain this metal in the greatest proportion, although in other respects with reference to their general influence as a purgative, advantage has followed their exhibition in these kind of diseases.

There are certain disorders that affect the two great orifices of the stomach, proceeding from a modification of scirrhus, or induration of the fine and delicate structure of this important viscus, in which experience has instructed us, that all preparations of iron, almost without exception, are found to exert an unfriendly influence. Here we are also to interdict the use of our chalybeated saline, and if necessary wholly employ the pure aperient spring.

In fine, I may observe, that in every doubtful case, where any embarrassment arises from

the effects of these waters, it will be much more prudent to relinquish their use altogether, until some modification be made in their administration, either by the addition of other remedies, which ought perhaps to have preceded the course, or by increasing or diminishing the dose, as the case may require. By a little management in this way, they may be made in many instances to produce the most beneficial consequences, where the very reverse may ensue from irregularity and indiscretion.

PART V.

Rules to be observed during a Course.

IN treating this part of our subject, we shall consider the best season of the year, the most suitable time of the day, the proper dose, and the temperature, at which these waters should

be drank; to which will be added some remarks upon the diet to be observed during their use, those medicinal means which assist their effects, or act as correctives or auxiliaries to their operation, and lastly, upon the duration of the course.

As much will depend upon peculiarity of constitution, the nature of the disease, and the state of the general health of the patient, it is impossible to give specific directions with reference to every one of these heads; a general rule of instruction must therefore suffice, and serve as a guidance in the greater number of cases.

Most mineral waters are used to the greatest advantage in the spring and summer months, and this is the time most suitable for those of Cheltenham. At this season most circumstances combine to render their effects more certain; from the smaller quantity of rain that falls at this period, from the evaporation on the earth's surface being proportionally greater, and in

some degree from the temperature, the mineral contents of a given proportion of the water are much more abundant. Exercise in the open air, so necessary when under a course of these waters, is enjoyed with every advantage, and the variety of amusement, afforded by a watering place, is increased by the charms of the spring season, and the cheerfulness of summer, which materially assists in diminishing those disheartening forebodings, too often the companions of those diseases, for which a visit to Cheltenham is recommended.

At this season of the year the animal spirits are more cheerful and buoyant, the circulation freer, the insensible perspiration more abundant, and the organs of the body more easily acted upon; hence remedies, which in chronic affections were before of no avail, will at this juncture act more salutary, and with much greater facility. It is on this account that a timely exhibition of our mineral waters serves not only to remove disease, but by judicious use, prevents many at their onset.

In this manner has their administration during the spring months overcome that condition of indigestion, which often precedes a severe fit of the gout, which, if neglected, would most probably have terminated in that way. As was before mentioned, the spring is the most favourable time of year for the gouty to drink these waters: the same may be observed in regard to those affections of the head, which require their use, as under such circumstances, there is a greater determination of fluid to that organ in the summer, marked by a perpetual state of drowsiness, and unwillingness to exercise.

In many cases the Cheltenham waters are advantageously used during the colder, and even the winter months. Their temperature at this season may be rendered less chilling, by the addition of a portion of the water slightly heated; and in very delicate habits, the greatest precaution should be used against cold, more particularly should any mercurial preparation be at the same time exhibited.

The most proper time of the day for drinking the waters is before breakfast, the stomach being at that time empty, and more susceptible of the necessary impressions. Their operation is thus rendered more certain, mild, and even effectual. Some are in the habit of again drinking in the middle of the day, and others even at bed-time, a most injudicious custom, as the good effect of any purgative medicine does not altogether depend upon the numerous evacuations it produces; nor are we to suppose, that the more we drink, the sooner will the cure be accomplished.

Formerly it was customary to encourage patients to swallow large quantities of mineral waters. Experience has instructed us not only in the inutility of such a practice, but in its often mischievous results, especially where a determination towards the head follows their use. Hence the morning dose, as applied to Cheltenham waters, will, generally speaking, be found sufficient, and if not so, it may be rendered

active by the addition of a purgative pill on the night preceding. Such practice is far more eligible, than to create distention and flatulency by over-large or too often repeated doses.

From the flavour of the water in the morning, it has been asserted that at that time it contains more steel than at the latter end of the day; of this there may be some doubts, yet the supposition is rendered more probable, from there being a less evolution of carbonic acid gas at an early hour, than when the temperature of the atmosphere is higher. At all events this circumstance may not be unworthy of attention in the application of the remedy towards the cure of certain diseases.

The dose of the Cheltenham waters will entirely depend upon the age, sex, constitution, habit of body, and disease of the patient. The general quantity for an adult is from half a pint to a pint, repeated at intervals of twenty minutes; but it is always best to begin with a

small dose, and gradually increase it, as the case may require. In simple indigestion, unaccompanied by general constitutional derangement, or obstinately costive bowels, a small dose, so as to produce two or three evacuations daily, will in general be sufficient. In the more complicated forms of disease, a greater allowance may be given, so as to produce a brisk catharsis. Should the waters not purge properly, but determine largely towards the kidneys, as was before observed, so much is not to be dreaded from this operation, nor is there any necessity for increasing the dose, should the disease be gradually subsiding.

It will in all cases be necessary to divide the dose, as the symptoms of nausea are thus obviated, and the coats of the stomach not over-distended. It will generally be useful after each portion to sit down for a few minutes, as by using exercise soon after, the evolution of fixed air in the stomach is apt to induce those uncomfortable feelings in the head, which have so often caused unfounded alarm.

The operation of the waters is much facilitated by gentle exercise, either riding or walking, between each dose, and the interval between the last and breakfast, should be at least half an hour, which time may be employed in exercise, if the strength of the patient admits of it. In delicate females, however, too much exercise is followed by disadvantage, as symptoms of flatulency, and swelled ankles sometimes take place. In such persons it must be so regulated, as never to induce fatigue, and the quantity of water used at the commencement should be taken in small portions and with the greatest circumspection. The feelings of the patient herself, will be a sufficient indication of the propriety of increasing the exercise or the dose.

In those subjects, who experience much uneasiness of the head or oppression of the stomach, it will be necessary to extend the interval between the two portions, and obviate the exhilarating effects of the carbonic acid gas, by letting the water remain quiet for some time in

the tumbler before drinking it; and to those who experience nausea, it is recommended to add a few drops of some aromatic tincture to each dose.

In delicate habits, irritation and feverishness frequently follow a journey of any extent, and experience has taught us, that an error of no small magnitude has often occurred from an impatience in commencing the use of the waters at a too early period. This must be guarded against, and for two or three days after arrival, in conjunction with quiet, some suitable cathartic or cooling medicine should be prescribed, to serve as a preparation for the expected salutary influence of the waters. This is more particularly applicable to those of a constipated habit, for the reasons before assigned.

There are some persons, upon whom a large quantity of these waters does not act sufficiently, to obviate which, it has been thought necessary to add to each dose, either a strong solution of the crystallized Cheltenham salts, or else what

is denominated “concentrated water,” which consists in evaporating the natural waters, until some of the earthy salts are deposited. In both instances this practice should be considered injudicious, as neither the solution or the concentrated water have the genuine properties of the natural springs; and holding in view that the process of evaporation subjects them to new changes, new chemical affinities being thus formed, and their gaseous contents escaping, this custom cannot be sufficiently condemned, more particularly as the addition is merely made at the will of the pumper, or according to the taste of the patient. It must moreover be considered that this addition is both forbidding to the taste, and unfriendly in its effects upon the tender coats of the stomach, often causing oppression, heat, thirst, and an acrid discharge, a circumstance to be expected from a fluid, in such large quantities, and at the same time so nauseous.

With respect to the temperature, at which the waters should be drank, this will in a great

measure depend upon the state of irritability of the patient's stomach; but in the far greater number of cases, it will be judicious to use them as they are drawn from the well, being thus more grateful and salutary. There are, however, some persons unaccustomed to early rising, whose constitutions are enervated from luxurious living and dissipated habits; and some females, who cannot bear conveniently a cold fluid upon their stomach at an early hour. To such it may be necessary just to take the chill off the waters, until the stomach is able to hold them at their usual temperature. Those subject to gout, jaundice, and rheumatism, may take them in this way at the commencement, and gradually diminish the heat from day to day. To those who are necessitated to drink in the winter season, so much objection cannot be made to the patients taking them warm.

The diet to be observed during a course of the Cheltenham waters must be light and easy of digestion. Many of their supposed failures are to be attributed to irregularity in living

during their administration, as nothing so decidedly counteracts the expected benefit, as inattention to this very necessary observance. Without a strict regularity in this point, expectation will often experience most serious disappointments. It is difficult to persuade patients to desist from what they esteem the absolute necessities of life. The sudden interdiction of the usual quantity of food and drink, will often give them an unfavourable impression of their physician, who must not however be biassed by the feelings of the patient. A little persuasion will soon convince an invalid of the absolute necessity of conforming to certain restrictions while under a course of these waters. In fact the patient's own feelings after abstinence, will be the means of his continuing to observe it. The ulterior and permanent benefit will amply repay him for his temporary privation.

Numerous are the examples, in which individuals have pursued their usual course of life, expecting every benefit from merely drinking of these springs regularly, but whose anticipa-

tions of relief were not answered on account of their own indiscretion. The quantity of food and wine must therefore be very much lessened, or so regulated as to prevent any obstruction from their effects.

It must not, however, be understood that the use of wine is to be altogether interdicted; on the contrary in many it acts medicinally, but in very few instances should the quantity exceed two or three glasses of good sherry or madeira, and in some few cases, some fine old port may be allowed. Acescent wines, whether domestic or foreign, must be carefully avoided; and generally speaking, malt liquor, whether under the form of porter, ale, or beer, is not a suitable beverage for those, who frequent Cheltenham for their health. Pure water, toast and water, or wine and water, will suit best, and as a degree of hardness exists in the fountain water in the neighbourhood of Cheltenham, it should be previously boiled to obviate this objection.

With respect to meats, mutton is more di-

gestible than beef, beef than veal, and this again more than pork; but the prohibition of any meat need not be ordered, provided it be well dressed, and found from experience to agree with the particular state of the stomach. Whatever is taken should be continued for some time without change, as the stomach thus gets habituated to it, and consequently digestion is carried on with greater facility.

The use of vegetables must be very much limited, particularly those of an acescent kind, containing very little nutritive and farinaceous matter; for the same reason, unripe or acid fruits counteract the operation of these waters. All kinds of pastry should be avoided during the course.

With regard to particular meals, breakfast should not be taken until half an hour after drinking the waters: no animal food or eggs should be taken at this meal, which may consist of tea, or not over-strong coffee. The cooler the tea is taken the better, as the nearer any

liquid (unless we except medicines which are given for a specific purpose) approaches to the heat of the stomach, the less danger will there be of its relaxing its fibres, or counteracting the effects of the waters taken a short time before.

Dining at an early hour is attended with great advantage to the invalids who visit Cheltenham, for after that necessary quiet, which is friendly to digestion, suitable exercise in the open air is of great moment, and may thus be enjoyed, where a late dinner renders it impracticable, and also causes the grateful evening beverage, tea, to be deferred to a very unseasonable period.

Suppers, even of the lighter kind, are seldom taken with impunity by invalids; and therefore must be most carefully avoided when using these waters: in fact, when at Cheltenham all food should be taken before eight o'clock in the evening, which will render sleep both sound and refreshing, and enable the patient to enjoy early hours, from which, under every

circumstance, such considerable advantages are derivable.

These directions may be by some deemed trifling and ridiculous, yet if they were always given, and strictly attended to, we should not hear of so many of the supposed failures of the Cheltenham waters; nor would so many patients desist suddenly from taking a remedy, and at the same time wonder at its (as they think unmerited) reputation.

Although the aid from medicines in furtherance of the effects from these waters may in most instances be dispensed with, yet the co-operation of appropriate means are often of the greatest moment, particularly on commencing a course. The waters may undoubtedly be taken alone in simple stomach complaints, unattended with constipation, or diseased sympathy of any other remote part. Where, however, general constitutional derangement arising from an impaired condition of particular organs or viscera exists; where a peculiarly torpid

state of the bowels, attended with unhealthy hard foetid evacuations, has been present for any length of time; and where flatulency, acidity of stomach, and loss of appetite, have tended to debilitate the patient, a preparatory course of medicine must not only be used, but should, under proper regulation, be continued for some time in conjunction with the waters. They are not of themselves sufficiently powerful to act upon organs already very torpid in their functions, and by the addition of a little extra medicine of rather a stronger nature, we supersede the necessity of over-loading the stomach by immense quantities of fluid, and at the same time shorten the course considerably.

In the choice of suitable purgatives in aid of the waters, great discrimination is necessary, for that kind which may answer one, may be decidedly injurious to another. It would be impossible to comprise all the minutiae of this necessary part of the subject within the limits of this little work; it must suffice to say, that in conjunction with the common purgatives,

mercurial and antimonial preparations must be often administered. This observation is more particularly applicable to those, who have suffered from the effects of tropical climates, where chronic affections are of a long standing, and of deep rooted character.

In cases of this description, mercurial medicines are but too often necessary, although they are frequently used so indiscriminately as to be attended with serious consequences, many supposing that nothing more is requisite than to use the blue pill or calomel in conjunction with the waters. Nothing can be more injudicious than this mode of proceeding, for mercury, although generally the best medicine during the course, is at times wholly inadmissible, and there are certain states of the body, wherein it is decidedly contra-indicated, for instance where extreme nervous irritation exists, accompanied with a peculiar whiteness of the tongue, and this in persons, who have previously suffered from an improper use of this mineral.

Should it be thought proper to use this powerful remedy, its effects should never be carried so far as to induce salivation, but merely an alterative influence, as considerable danger is to be apprehended from cold when the constitution is affected by it. Another circumstance to be observed in regard to mercury, is that it should never be used alone. It acts much better and in smaller quantities, when combined with other remedies, as aloetics, antimonials, &c. as the case may require. During the entire course, it will be seldom necessary to continue the mercurial preparations, but at the commencement they act as a deobstruent and promote the secretions, which the waters will after a time be of themselves capable of performing.

There is no remedy, which more materially assists the operation of the Cheltenham waters, than a judicious use of the warm bath, more particularly in cutaneous affections. Indeed it is always advisable to use a bath or two before

commencing the course, the pores are thus opened, the surface cleansed, and a determination towards the extremities of the body facilitated. As the waters increase the insensible perspiration, the greater opportunity we give them of promoting it the better. To this intention warm bathing is very conducive, and will indirectly induce a degree of healthy vigour throughout the constitution; thus serving as a proof against the erroneous opinion of its relaxing properties; for any means, which promotes the healthy performance of our animal functions, cannot be considered in a debilitating light. Baths are generally used at too high a temperature, and at an improper time of the day. Their heat should seldom exceed 100° , and the nearer they approach 96° or 97° , the better. An hour or an hour and a half before dinner is the time to take a bath; but where it is intended specifically to promote perspiration, shortly before bed hour is the proper period. In rheumatism they may be used at an increased temperature, and the time for remaining in the bath may be from twenty minutes to half an hour,

or even more. Twice or thrice a week are the proper periods to use a bath. On the continent they are in the habit of remaining a much longer time in baths than in England. This, however, will in a great measure depend on the heat, at which they are used; for if they exceed 100° we must naturally expect a debilitating effect as the consequence. At a more moderate temperature, the patient may remain in a considerable period, particularly if the bath be of such a size as to permit of his walking about in it, of which there are some at Cheltenham. This is more particularly applicable to the rheumatic, who can often walk with greater ease to their complaints in a tepid bath than in the open air. Should the bath induce symptoms of giddiness, it should be immediately quitted.

In some cutaneous complaints, sulphur is a good addition to the common warm baths, particularly if the disease be obstinate or of long duration; and the dry sulphureous vapour baths are not only of use in these kind of affections,

but also in some rheumatic, gouty, and paralytic cases. Vapour applied from the evaporation of boiling water, whether fresh or salt, is found a most salutary means in many of the above-named diseases, and has proved efficacious where the common warm bath has failed. Indeed it should be always tried in rheumatic cases, where the usual means have not succeeded, unless there be something particular in the state of the patient to contra-indicate it. There are some who cannot bear the violent operation of a vapour bath, in whom it may be more convenient to apply the vapour topically, when this can be done effectually. This may be easily accomplished, when the disease affects particular joints, as an arm, the wrist, a leg, &c.

The nitro-muriatic bath has been before mentioned in cases of diseased liver; it is altogether a very valuable remedy in conjunction with the Cheltenham waters, not only in chronic hepatitis, where the circulation in the liver is extremely torpid, but in those cases of dyspepsia, accompanied with a deficiency of the bile,

unhealthy secretions, black and offensive stools, and a peculiarly yellow state of the tongue. Indeed this remedy will of itself prove of considerable utility in most diseased conditions of the liver, uncombined with inflammatory diathesis. Its effects are more efficacious and quicker upon females than upon men, and its use in suppression of the menses has often been most satisfactory. Its influence upon the general health is not attended with those consequences, that often follow mercurial preparations, in place of which it may frequently be ordered with advantage. Where the waters are used for the secondary symptoms of syphilis, or for diseases resembling them, the nitro-muriatic bath will be always an useful addition. As a substitute for the effect of this bath, some are in the habit of prescribing the two acids internally. This is a most injudicious practice, as the stomach is thus unnecessarily weakened. During a course of the Cheltenham waters, this combination is to be strictly avoided, as a much more salutary effect may be best expected from the bath itself.

Throughout this little volume, the utility of constant exercise has been forcibly inculcated during a course of these waters. By this means the secretions are promoted, and the general health very much invigorated. The nature of the complaint, and the degree of existing strength, must best determine the most suitable kind of exercise. In an open carriage, or on horse-back, regulated according to the condition of internal disease, will be most appropriate when bodily complaints exist; but where the limbs and extremities are affected, and where gentle walking exercise can be taken without extreme fatigue, or unusual exertion, it should be put in practice, and the more the patient is in the open air in fine weather, the better. Horse exercise is particularly well adapted to the generality of female complaints, whose uterine organs are thus gently stimulated, and the circulation through them promoted, without inducing general debility.

The chalybeate or pure steel waters of this place have been sometimes injudiciously pre-

scribed, as auxiliaries to those of the aperient kind: this practice cannot be sufficiently deprecated, as their effects serve to counteract each other, contrary to the opinion plausibly inculcated, that the pure steel water prevents the debilitating effects, arising from the continued purgative operation of the other. Nothing can be more erroneous, as before stated, than this opinion, as it has in no instance been supported by facts; for if the operation of the aperient waters be judiciously managed, their ultimate effect will be found to be any thing but debilitating. Where the above mentioned waters have been conjointly used, a violently purgative effect has ensued in more instances than one. An effect of a contrary nature has sometimes arisen, rendering the case much worse than before commencing their use.

A case has lately occurred to the author, in which a young lady, by order of her domestic physician, drank the pure saline in the morning, and the chalybeate in the afternoon, while labouring under a liver complaint of some stand-

ing. This course had not been pursued more than five days, when acute inflammation of the liver set in, rendering copious blood-letting, blisters, and the most active means indispensable. When using the chalybeate, her stools were black, not an unusual appearance from taking steel medicines, which effect has often caused alarm. Upon the inflammatory symptoms being subdued, the use of the pure saline, and of some alterative medicines taken at night, with a perseverance in the nitro-muriatic bath, was attended with the happiest results, and in the end with the total removal of a complaint of three years duration. This is one very marked instance among many, in which chalybeate waters, used while inflammatory symptoms are present, prove prejudicial, and often induce diseases of a more serious character than those for which they had been prescribed.

Although the use of the Cheltenham waters and of the pure chalybeate conjointly, has been condemned, yet it is not from hence to be concluded that the latter remedy is to be altogether

excluded in disease. It is only under the above-mentioned circumstances that it has not been recommended. From the nature of the two spas, they must naturally be expected to counteract each others effects.

Most mineral springs containing a large proportion of iron are not very well adapted for those cases, in which we require a purgative operation; and where there is an impaired condition of the biliary secretion, followed by an unhealthy appearance of the alvine evacuations, iron medicines are contra-indicated, unless the metal be in exceeding small quantity, or combined with other remedies, which counteract its influence. Such is not the case of the chalybeate spa of this place, for the other constituent principles are more of an astringent than an aperient nature. The diseases too in which we find the purgative waters most beneficial, are attended with a certain degree of feverish exacerbation, although of a very passive nature, and as such disorders are more likely to be increased than diminished by a spring containing

iron, it is not under such circumstances to be recommended. Indeed in all cases where there is any fever, however slight, or where the functions of the secreting organs are imperfectly performed, by reason of topical congestion or incipient inflammation, the chalybeate is altogether inadmissible.

But in simple indigestion, where the debility exists in the stomach itself, accompanied with much nervous irritability or general languor, the secretions being at the same time healthy, the iron spa will be found sufficiently restorative. Under similar circumstances it will be beneficial in certain female complaints, when combined with a proportion of aloetic medicines, to counteract its constipating tendency. It will also have a salutary influence in some of the dyspeptic attacks of old people, whose indigestion as frequently arises from want of energy in the constitution, as from any morbid condition of the organs themselves. It must be remembered that on repetition, the chalybeate loses much of its power, but under all circum-

stances it must, however, be entered upon with extreme caution.

Indeed invalids are often too prone to change one kind of water for another, according as fancy or caprice may point out, without considering that the consequences may prove more injurious than useful. This practice is extremely reprehensible, and has been often followed by a punishment of the indiscreet temerity. In the course of the season 1820, a gentleman used the pure saline for the removal of an acidity in his stomach, with considerable benefit for three weeks—to obviate debility, he thought it would be better to exchange the pure for the chalybeate saline, for the remaining ten days he meant to stay in Cheltenham,—the acidity in consequence returned, he was obliged again to use the pure saline, and to remain three weeks longer, before a second removal of the symptoms followed.

The duration of a course of these waters will depend upon the nature of the disease, the time

it has been present, and upon the ostensible effects of the remedy itself. In cases of simple indigestion, and of inconsiderable bilious complaints, the usual course is from three to five weeks. Under a period less than three weeks no permanent benefit can be reasonably expected, and during this time they may be taken with safety; they may then be desisted from for eight or ten days, the patient still however observing the same rules as to diet and exercise. Their use may be then resumed for ten days longer, without the aid of any auxiliary medicine.

In chronic complaints of an obstinate character, a much longer course is required, and greater circumspection is necessary in the selection of those remedies, which are meant to assist the waters. A continuation in their use for months, nay at certain intervals, for years, is sometimes requisite; but under every circumstance, nothing can be more prejudicial than using too large a quantity at a time, an error,

which not only induces a relaxation of the fibres of the stomach, but may lay the foundation of hydropic symptoms.

Tedious complaints, which have been long in forming, will generally require a protracted course of the waters, and their continuance must be regulated according to the powers of the constitution. Some delay may be thus necessarily occasioned, but as many errors have arisen from persevering too long, as from an opposite mode of proceeding. Many, who at first derive great benefit from these salutary springs, considering their complaints removed, relinquish the remedy too suddenly. This injudicious practice has been frequently followed by a return of the disease, and frustrated the result of a means, which would have otherwise proved permanently curative. In general, the old rule of continuing the remedy after the cessation of the disease, should, with reference to the object under consideration, be strictly attended to; nor should it then be desisted

from suddenly, but in a mild and progressive manner, to obviate any ulterior inconvenience, which may unexpectedly arise.

Before concluding this volume, it may be necessary to make a few remarks upon the impropriety of drinking Cheltenham waters, when the body is not affected with any disease. There are many who follow this practice, which is exceedingly injudicious, not to say absurd. The use of any remedy however innocent may frequently exert an unfriendly influence in a constitution, where all its functions are carried on properly. In truth there is an evident impropriety in taking any thing, endued with active medicinal properties, where no complaints or unpleasant feelings are existing at the moment. The animal body is subject to certain laws and regulations for its well-being and healthy existence. If these be subverted, or in any way infringed upon, a train of morbid sensations arise, which constitute disease. According to the powers of the constitution, it is acted upon by external impressions: hence a substance

apparently innocent in itself, may in delicate though healthy habits induce disease, and what may cure this in one subject, may excite it in another. Thus many, who drink the Cheltenham waters without any other object but caprice and fashion, often bring on an unexpected complaint, by subverting the natural arrangements of the animal economy. Symptoms of flatulency, nausea, and vomiting have taken place in the stomach previously healthy, by an unwarranted abuse of the springs. As such people never change their mode of living during this imprudent practice, they are on that account the more liable to suffer inconvenience. By such errors the foundation of future disease may incautiously be laid.

It is indeed from this erroneous custom, that many have altogether condemned the waters as a dangerous remedy. If they are not dangerous, they should at all events not be trifled with, more particularly by those subject to hereditary complaints of a certain character, or who, from the formation of their bodies, are predisposed to

apoplexy, palsy, &c. We should always remember that by injudiciously taking a remedy without any object in view, we may indirectly render its probable chance of success under future ailment exceedingly precarious.

Finis.

APPENDIX,

CONTAINING THE

Latest Analysis of the Cheltenham Waters,

BY DR. SCUDAMORE.

No. 1.—Described by the proprietor as the
strong chalybeate saline water.

Analysis.

In a pint,

	Grains.
Muriate of soda	55·50
——— lime	3·31
——— magnesia	2·10
Sulphate of soda	21·80
	<hr/>
	82·71

Oxide of iron, a minute portion.

No. 2.—Described as the strong *sulphuretted saline water*.

Analysis.

In a pint,

	Grains.
Muriate of soda	25·70
——— lime	3·31
——— magnesia	1·52
Sulphate of soda	21·76
	<hr/>
	52·29

Oxide of iron, a minute portion.

No. 3.—Described as the weak *sulphuretted saline water*.

Analysis.

In a pint,

	Grains.
Muriate of soda	31·00
——— lime	1·84
——— magnesia	2·05
Sulphate of soda	22·80
	<hr/>
	57·69

Oxide of iron, a trace.

No. 4.—Described as the *pure saline water*.

Analysis.

In a pint,

	Grains.
Muriate of soda	46·40
———— lime	3·07
———— magnesia	2·02
Sulphate of soda	28·64
	<hr/>
	80·13

No. 5.—Described as the *sulphuretted and chalybeated magnesian spring, or bitter saline water*.

Analysis.

In a pint,

	Grains.
Muriate of soda	23·50
———— lime	4·92
———— magnesia	3·61
Sulphate of soda	38·80
	<hr/>
	70·83

Oxide of iron, a minute portion.

No. 6.—Described by the proprietor as the *saline chalybeate*.

Analysis.

In a pint,

	Grains.
Muriate of soda,	76·15
———— lime	3·07
———— magnesia,	3·02
Sulphate of soda	11·62
	<hr/>
	93·86

Oxide of iron, a minute portion.

THE ORIGINAL SPA OR OLD WELL.

No. 1.—Described by the proprietor as the *strong ærated chalybeate saline*.

In a pint,

	Grains.
Muriate of soda	58·20
———— lime	6·21
———— magnesia	2·54
Sulphate of soda	14·56
	<hr/> 81·51

Oxide of iron, a minute portion.

No. 2.—Described as the *strong sulphureous saline*.

In a pint,

	Grains.
Muriate of soda	22·60
———— lime	3·68
———— magnesia	5·16
Sulphate of soda	52·32
	<hr/> 83·76

Oxide of iron, a minute portion.

No. 3.—Described by the proprietor as the *magnesian saline*.

Analysis.

In a pint,

	Grains.
Muriate of soda	17·60
———— lime	3·08
———— magnesia	3·30
Sulphate of soda	43·20
	————
	67·18

Oxide of iron probably a grain in a gallon.

No. 4.—Described by the proprietor as the *pure saline*.*

* This analysis is evidently incorrect. At the time it was made, the proprietor to anticipate the wishes of some of his customers, “was in the habit of adding a concentrated solution of the evaporated salts to this water; and hence the obvious explanation of its varying composition.” It is now the same in its effects, and nearly so in its composition, as the pure saline of the Montpelier spa.

Analysis.

In a pint,

	Grains.
Muriate of soda.	47·80
——— lime.	4·29
——— magnesia.	7·30
Sulphate of soda	59·20
	<hr/>
	118·59

Oxide of iron, a trace.

THE SHERBORNE SPA.

The water described as the *sulphureous and chalybeate*.

Analysis.

In a pint,

	Grains.
Muriate of soda	3·31
———— lime	1·23
———— magnesia	a trace
Sulphate of soda	4·37
	<hr/> 8·91

Oxide of iron, probably half a grain in a gallon.

The water described as *pure saline*.

Analysis.

In a pint,

	Grains.
Muriate of soda	72·8
———— lime	4·29
———— magnesia	·59
Sulphate of soda	6·76
	<hr/> 84·44

The water described as the *magnesian* water.

Analysis.

In a pint,

	Grains.
Muriate of soda	1·67
——— lime	1·85
——— magnesia, a trace	
Sulphate of soda	2·43
	<hr/>
	5·95

THE END.

S. BETTISON,

Cheltenham Library.

HAS ALSO JUST PUBLISHED,

A New Edition of the Cheltenham Guide,

Price Three Shillings.



A MAP OF THE COUNTRY

Twenty Miles round;

On Rollers, 5s.—In Case for the Pocket, 4s.



A PLAN OF THE TOWN,

In Case, 1s. 6d.



MAP AND PLAN TOGETHER

In Case, 5s. 6d.—Rollers, 6s.



Also,—now Publishing,

A Series of highly-finished Views,

In Cheltenham and its Environs,

Executed by Artists of the greatest Celebrity.

